

Discovery—June, 1933

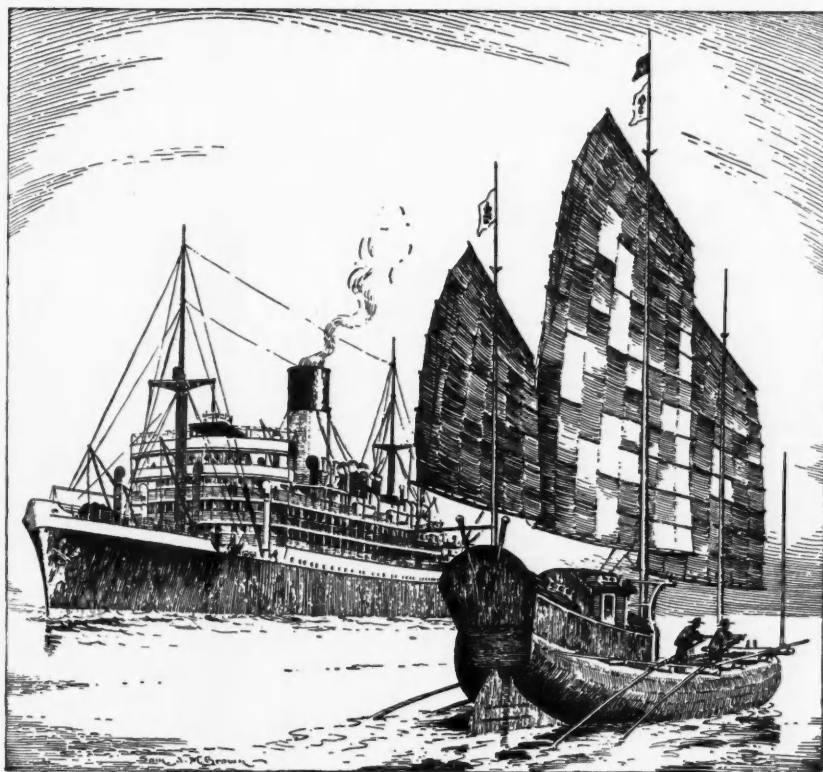
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PRIZES FOR TRAVEL ESSAYS.

DISCOVERY

A Monthly Popular Journal of Knowledge

Vol. XIV. No. 162. JUNE, 1933. 18. NET



A Blue Funnel liner passing a river junk near Shanghai.

PRINCIPAL CONTENTS

- TRAVEL IN MODERN LIFE. By Lord Conway of Allington
THE RAT RIVER ROUTE TO ALASKA. By Lady Vyvyan
OFF THE BEATEN TRACK IN JAPAN. By Walter Weston
IMPRESSIONS OF NEW ZEALAND. By R. S. Conway
THE MINING WORLD OF GREECE. By S. Casson
GEORGIAN DAYS. By W. E. D. Allen

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DISCOVERY

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Vol. XIV, No. 162, JUNE, 1933.

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Notes of the Month.

ONE of the signs of the times is the growing influence of travel in our national life. Since the war the facilities offered by rail, sea and air have placed opportunities for journeys abroad within the scope of almost everyone. In an article on another page, Lord Conway of Allington, who has travelled widely in many countries, reminds us that although we cannot all undertake lengthy and difficult expeditions, none is debarred to-day from enjoying the journeys organized by commercial enterprises. New countries, new peoples open our eyes and quicken our understandings, and we return home wiser and better people than when we started out.

In the articles which follow distinguished travellers take us off the beaten track in many parts of the world. Lady Vyvyan describes her journey with a woman companion and two Indian guides up the Rat river from the Mackenzie Delta to Alaska. The Rev. Walter Weston, who lived for many years in Yokohama and is the author of "Exploration in the Japanese Alps," takes us into the interior of that strange and beautiful country. Mr. Stanley Casson, well known to readers of *Discovery* for his scholarly articles on the archaeology of the Mediterranean, describes a visit to the "mining world" of ancient Greece. Professor Conway records in lighter vein his impressions of a visit to New Zealand; and Mr. Earl Hanson, an American scientist, contributes an

account of his recent journey through South America. All write from an intimate personal knowledge of the countries they describe, and we therefore make no apology for devoting our pages this month entirely to travel. Attention is also drawn to the competition announced on page 176. Prizes are offered for the most interesting travel essays submitted by readers.

"Cruising by train" has for many years been a popular form of travel in America and most of the Dominions, while the journey by rail through Portugal, organized by the Paris-Orléans Railway, has long been a favourite tour from Paris. The adoption of this method of travel by British railways was recently urged by correspondents in the *Times*, and its pleasures were emphasized in a leading article. A train journey provides an economical and easy means of seeing some of the most beautiful scenery in the country and of visiting places of historic interest. If this mode of travel has not attracted passengers in the past it is because the railway companies have neglected to provide the right kind of facilities. We are glad to note the London and North-Eastern Railway's intention of running a cruising train which will travel for two thousand miles through some of the finest scenery in England and Scotland. The tour will extend over seven days, leaving King's Cross on June 17th and returning on June 23rd. We commend the enterprise of the L.N.E.R. in setting a fashion which the other railway companies would do well to follow.

There was general disappointment when, after months of laborious preparation, Sir Hubert Wilkins was prevented after all from making his submarine expedition to the Arctic. Those who followed the fortunes of the *Nautilus* will be glad to know that Sir Hubert intends to make a new attempt when he returns from accompanying the Ellsworth party to the Antarctic. The experiments with the *Nautilus*, he states, have enabled him to design the ideal craft and he hopes to set out next year. The voyage will cover about 2,200 miles, more than half of which

will be under the ice. Lady Wilkins was clearly determined to accompany her husband and, as she now explains, she "will be signing on as cook." Meanwhile the Ellsworth expedition expects to leave Norway on August 1st, reaching Capetown about the middle of September. It is likely to occupy twelve months, and Commander Ellsworth and a companion hope to fly over the Antarctic Continent from the Ross Sea to the Weddell Sea. The return flight, which will be made without a stop, will cover nearly three thousand miles and has never been undertaken before. This is probably the most daring journey ever attempted in Polar regions, and we wish Commander Ellsworth the success he deserves.

* * * * *

The discovery of remains which are among the oldest yet found in Mesopotamia is announced by the British expedition to Tal Arpachiyah, a prehistoric site in northern Iraq. The expedition is under the direction of Mr. M. E. L. Mallowan, of the British Museum, who reports that examples of pottery discovered in the remains of mud-brick buildings definitely date the beginnings of Arpachiyah well back into the fifth millenium B.C. There were apparently two main periods of occupation; belonging to the earlier period is a series of painted pottery which is said to bear comparison with the finest productions of early Greece. They are brightly decorated and some are of egg-shell thickness, beautifully finished. Another interesting discovery is a store of wheat in a circular granary belonging to the earlier period of occupation. Mr. Mallowan thinks that these are probably the oldest specimens of wheat found in Mesopotamia. The expedition hopes, in the light of later discoveries, to be able to trace the complete material development from the first remains to the last occupation of the site.

* * * * *

The bed of the Indian Ocean is to be searched for the "lost continent" of Lemuria. An expedition under the leadership of Captain J. M. Mackenzie will leave London in August and it is expected that the search will last for nine months. The ship will carry the latest type of deep-sea apparatus, including a series of steel bottles which are let down to capture specimens of deep-sea life and close automatically when they reach a certain depth. Use will also be made of an "echo" device which measures the depth of the sea by the time which the echo takes to return from the bed. It is hoped to find traces of the "lost continent" by means of lead lines four miles in length, and the expedition will also endeavour to discover whether there are mountain ranges under the sea

such as were found in the Atlantic. Lemuria is thought to have extended from Madagascar to Sumatra and India in prehistoric times, and the new investigations should have interesting results; at least it is a romantic quest. Captain Mackenzie, the leader, commanded the research ship *Discovery* during Sir Douglas Mawson's last Antarctic expedition.

* * * * *

Sub-marine ruins have lately been announced from another quarter. While flying over the southern part of the Dead Sea an officer of the Royal Air Force claims to have distinctly seen a town lying beneath the water, which was unusually calm and clear at the time. The theory has been advanced that the ruins may reveal the origin of the story of the destruction of Sodom and Gomorrah. Another flying officer, stationed at Abukir, reported that while flying over the bay he sighted ruins beneath the water, the existence of which was later confirmed by fishermen. Several columns have been identified by Prince Omar Toussoun who immediately undertook investigations. According to a message from Cairo, a finely chiselled head of Alexander the Great was among the stone fragments brought up by divers.

* * * * *

In connexion with deep-sea diving, the recent tests of a new diving dress carried out for the Admiralty at Portsmouth are of interest. It is explained that the new dress enables the diver to descend to far greater depths and to remain longer beneath the surface than is possible with the equipment now in general use. The inventor claims that it is possible to reach a depth of 1,200 feet, and he himself remained beneath the surface for half an hour during the tests. The new dress is a steel cylinder to which flexible arms and legs are attached. The pincer-like claws attached to the arms enable the diver to pick up objects as small as a sixpence. The services of the pumping party which at present accompany a diver to feed air to him are dispensed with since with the new equipment the diver carries his own air supply in oxygen bottles on his back. It will be interesting to see whether the tests are equally satisfactory when the equipment is tested in the open sea.

* * * * *

Spectators of Señor de la Cierva's demonstration flight in his latest autogiro at the London Airport were amused as well as instructed by the antics of this odd machine. It can fly sideways, stop dead in mid-air, descend vertically, and hop across the aerodrome like a grasshopper. The latest model incorporates many improvements, reducing the control gear to a minimum.

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Travel in Modern Life.

By Lord Conway of Allington.

"The influence of travel in modern life is not to be comprehended in a few sentences. How many travellers by air, rail or sea, though they do not intend to accept the risks of novel adventure, are stimulated by reading the exploits of bold wanderers to visit countries where human beings are living a life widely different from that in a modern British home."

MAN has been from earliest recorded time a travelling animal. The discoveries of the remains of prehistoric man, which have followed one another so rapidly, have shown that from the earliest ages man has been scattered over the face of the earth. So complete is the scattering that no one can yet assist where he had his beginning.

The Habit of Wandering.

The world into which man came at a date remoter than any yet ascertainable was not a place made for the comfort of *Homo sapiens*. From the first he had to struggle against nature for a footing. He had to cut down forests, drain swamps, irrigate deserts—in fact he had to treat nature as his foe. His life was a contest, and sometimes, but not always, a conquest. Wherever he might be settled it was only for a time. Was he a hunter, game took him ever further afield. Was he an agriculturist, he was led to seek for more fertile soil. When trade arose, the trader was a wanderer from the start. Thus the habit of wandering is deeply rooted among the emotions that determine human activity.

One of the earliest books of travel proceeded out of ancient Egypt, and from that day to this travel has been one of the main subjects of literature. The Bible is rich in travellers' tales. A great though not perhaps the main delight in travel has been in adventure. The great travellers, from Marco Polo to Stanley, have been great adventurers. The charm of their books has lain in the wonderful tales of adventure which they enshrine. Books of travel have been the most efficient enlistment agents that send forth explorers to search out the unknown places of the world.

The work of generations has yielded to us a general knowledge of the face of the world though we are far from yet knowing it in detail. If adventure has been the crude attraction that carried bold explorers far and wide over the world, there have been more potent though less baldly attractive forces at work towards the same end. If the earliest systematic travellers were traders, the most persistent have been men of science. The broad features of the earth's surface—its mountain ranges, its rivers, its great seas and lakes—have been easily discoverable and discernible

by intelligent adventurers; but the kind of knowledge which science demands is only obtained by skilled scientific observers. Geologists, biologists, entomologists, botanists, and every other type of observer, have been called upon to wander forth into the most remote and inaccessible regions to bring back records and specimens.

A couple of centuries ago mountain regions were little known. Ignorant folk believed them to be the home of demons, dragons and such like enormities. Cultured people regarded them as hideous encumbrances to be passed by and as far as possible avoided by travellers who had to approach them. Their first explorers were frankly adventurers who had accepted the challenge of nature and dared to penetrate to the deepest recesses of the abodes of snow. They were followed by geologists, surveyors, and other sorts of observers, who enquired into the structure and origin of the hills, explained their forms and described the phenomena associated with them. The nature and features of glaciers were discovered and their effect on the surface over which they moved was registered. Early climbers were satisfied when they had described the regions over which they scrambled. Now an expedition sent forth to explore Everest and its surroundings needs to be accompanied by surveyors, photographers, men of several sciences, and a whole army of transport workers.

Many Kinds of Travel.

The influence of travel in modern life is not to be comprehended in a few sentences. There are as many sorts of travel pursued to-day as there are kinds of travellers. Most important, of course, are the scientific explorers whose work is as yet very far from completed. They may be adventurers as bold as any of their unprofessional predecessors. Thus Professor J. W. Gregory, who recently lost his life in some rapids high up in one of the tributaries of the Amazon, was a great adventurer. Beginning his professional career as a geologist, he discovered and explained the great African Rift Valley which he explored at the risk of his life among the wild Masai. He came with me to Spitsbergen and revealed the geological structure of that region while incidentally taking part in the first crossing of the island. As a Professor in Australia

he travelled far and wide in that continent and added largely to our knowledge of its construction. He travelled all over India as a member of a Royal Commission. He made a dangerous journey through remote parts of China. He ended his days and his last great journey in a perilous, and as it proved a fatal, effort to explain the volcanic and other forces which had shaped the South American continent and determined the trend of the Cordillera of the Andes.

It can be given only to a few to make such great expeditions as Gregory led. An ordinary civilized but busy person cannot hope to take part in journeys of so elaborate a character. But the account of such journeys, read at home in the comfort of a man's own house, stimulates admiration of great accomplishment and brings into the world of every-day the consciousness of a larger life being lived by a man's own contemporaries. How many travellers by rail, air or sea, though they do not expect and do not intend to accept the risks of novel adventure, are stimulated by reading the exploits of bold wanderers to go forth from their hum-drum homes briefly to visit countries of which they have read, and where human beings are living a life widely different in its daily round. A few days spent in comfort on a Nile steamer will enable anyone to read with understanding the story

of the discoveries made in Africa only a couple of generations ago. The Atlantic crossed in a great palatial steamer is the same ocean which Columbus navigated. A cruising steamer will carry a large and merry party in a few days to the edge of the Polar ice pack, where it will be possible to see from the deck of a ship all the phenomena of the Arctic regions which till recently could only be approached by specially equipped vessels.

By modern travel I mean the kind of travel which is possible for contemporary folk brought up and living in the ordinary circumstances of every day. Those of us who have been able to travel widely and at our pleasure are inclined sometimes to look down upon the herds of tourists who seem to be driven like sheep whither their contractor decides. It is a mistake so to regard them. Many of them, perhaps, never left their homes before and may never have the money to leave them again. This single experience may be their one and only vision of the wide exterior world. Every hour is precious, bringing with it new scenes, new countries, new peoples. Their eyes are being opened, their understandings quickened. They are gaining illumination from hour to hour, and when they return home they will be wiser and better folk than they were when they started out.

Prizes for Travel Essays.

SOME of the most interesting articles appearing in *Discovery* are sent to the Editor by readers who are not specialists or professional writers, but are prompted to describe some unusual experiences or observations. Journeys of geological or archaeological interest, holidays with rod or net, and foreign travel off the beaten track have frequently provided subjects for an article of unusual interest.

Many examples could be mentioned from our pages. Mr. Hugh Nicol's articles entitled "A Holiday in Search of Salt" at once comes to mind. The author described a summer visit to the Stassfurt mines in Austria, where after prolonged investigations he at last discovered the coveted specimens of rock salt. Then there were the articles submitted from Banff, Alberta, by Mr. Dan McCowan, a trapper who chanced to read *Discovery* and thought that his observations of wild life would interest readers. Other articles in this category are those by Mr. J. E. Pryde-Hughes on his travels in Central Europe, Mr. P. L. Guiseppi's account of plant-hunting in Serbia, and the article on bird-watching in the Orkneys by Miss M. G. S. Best.

As a feature of the travel number, the publishers of *Discovery* have decided to offer prizes for the best

essays describing a journey in England or abroad, no restriction being placed on the subject. The length should not exceed 2,500 words, and preference will be given to entries which are illustrated by photographs or sketches. There will be a first prize of £20, a second of £5, and two consolation prizes of £2 10s. each, prizewinners being required to select purchases to the amount of their prizes from the firms whose announcements appear in the advertisement pages of this issue. If desired, the money may, of course, be divided between several firms.

The Editor reserves the right to publish the winning entries in whole or part, the prize money being accepted in each case by the author as full payment for publication. Essays must reach the Editor by July 24th, and must be accompanied by the entry form which appears on page xliii. They should be written on one side of the paper only, and where the return of an unsuitable manuscript is desired it must be accompanied by a stamped addressed envelope. No correspondence regarding the competition can be entered into by the Editor, whose decision must be accepted as final. The results will be announced in the September issue of *Discovery*.

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The Mining World of Ancient Greece.

By Stanley Casson.

Mr. Casson recently camped for ten days on Mount Pangaeum, in the Philippi Plain, the centre of the mining world in ancient Greece. The author's interests were varied, and among his finds was a finely preserved Roman bridge which probably connected the mountain fortresses of the north with the foothill settlements in ancient times.

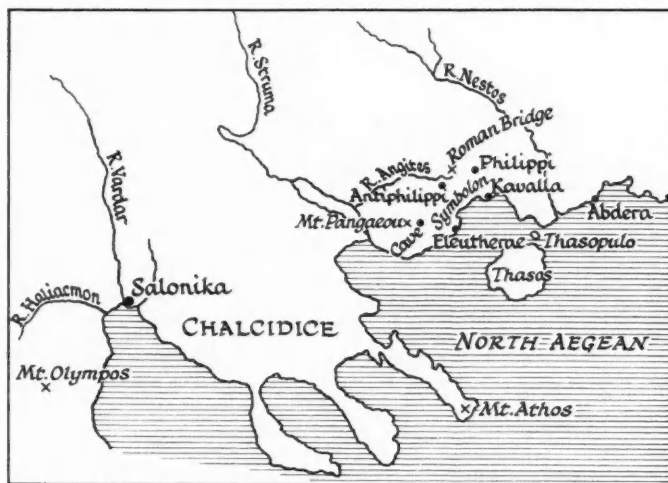
THE region between the northern projections of Mount Olympus near the river Haliacmon and the river Nestos, near the great city of Abdera, was the main area in Greek lands from which gold and silver were obtained in quantity. The eastern half of this region in particular was more prolific in the two precious metals than the remainder. Both Philip of Macedon and Alexander based their policy as well as their kingship upon the enormous wealth of the mines of the Philippi plains and hills. Earlier, from the time of Peisistratos of Athens to the foundation of the Delian League, the northern mines were the perpetual lure of adventurers, politicians and local tribes. Greek literature is more fully informative on the matter than on any other economical problem of antiquity. We also know for certain that both gold and silver were worked in these parts in the Bronze and Iron Ages.

I have visited most parts of the area in question at various times during the last ten years,* but I had always wished to make a particular and detailed examination of Mount Pangaeum and its immediate vicinity in order to clear up many outstanding problems. I had made one short visit to the Pangaeon district some years ago but was able recently to go again, fully equipped for a detailed study. The following notes cover a varied ground, geographical, geological and archaeological, made on the mountain itself and in the plain. I was able to make a particularly close study of the mountain, for we

took mules and tents and camped for some ten days at a height of some 5,000 feet.

The summit itself is just over 6,000 feet. The view from our camp over the Philippi plain was of remarkable beauty, and it was of great interest to watch at dawn the mists that entirely covered the plain slowly rise with the sun and in a steady procession slide slowly and gracefully to the summit of the mountain, where

they collected and remained throughout the day. The daily spectacle was always exciting and its regularity astonishing. It seemed almost to keep to a timetable. Then there were the flowers which were of amazing beauty and variety. Fritillaries and lilies of the valley grew in profusion together with a rare flower of the "Star of



SKETCH MAP OF THE DISTRICT VISITED BY THE AUTHOR.

Bethlehem" kind, which I was later able to identify as *Ornithogallum cernuum*.

From our camp on the mountain we could see the whole of the plain of Philippi in the greatest detail after the mist had risen, and our view extended to the sea where the island of Thasos and its small satellite Thasopulo were clear in every detail. Between the plain and the sea the great barrier ridge, called Symbolon, that causes the inundation of the plain stood out sharply. There is no outlet through it for the accumulated waters of the plain to the sea. Over the ridge is the beautiful town of Kavalla, the ancient Neopolis, which lies on a promontory and is as typical a Greek colonial foundation as one could find in Greek waters. But Mount Pangaeum dominates the whole country. My work was rendered simpler by the assistance afforded by the excellent new Greek staff map (scale 1:100,000) which definitely supersedes

* For fuller details of the ancient records as well as of the western area see my *Macedonia, Thrace and Illyria*. (Oxford University Press, 1926.)

all previous maps of Macedonia. Both the contours and the general surveying of this map seem substantially accurate in detail, and in the sections which I consulted I was unable to detect any important errors.

Pangaeum mountain stands as a wholly isolated mass of which the southern and south-eastern faces are extremely precipitous, while the western and eastern ends project into the Strymon and the Philippi plains respectively with a relatively gradual descent. The southern faces of the mountain do not run down to the sea but to a narrow valley, itself only barely above the sea level, which conveys the road from Pravi to the Strymon mouth. Between this valley and the sea is the western prolongation of the Symbolon ridge, which itself begins at Kavalla. Only at the actual town of Pravi can Mount Pangaeum be said to lose its isolation, for the contours of Symbolon converge so closely to the Pangaeian foothills that they almost

form one system. At the same time the depression along which the road running westwards from Pravi is aligned, is a clear if narrow line of demarcation between the two separate hill systems.

The geology of the whole area is of the greatest importance. It has not yet been geologically mapped, nor could I pretend in any way to contribute towards a full and accurate geological survey. At the same time I was able to establish some geological facts which may help subsequent workers. On Pangaeum itself there is no granite. Yet the coast for a considerable distance is wholly granitic. Extending between a point a little west of the cove of Eleutheræ to a point well east of Kavalla, the coast consists almost entirely of grey granite with a horizontal cleavage. The weathered eminences are worn by the action of wind and rain into typical Dartmoor tors.

The limestone forms a junction with the granite along a line that runs approximately N.E. and S.W. from the cliffs behind the village of Eleutheræ to Mantik Metochi on the Kavalla-Drama road, and

thence along the ridge of the hills immediately east of this hamlet. The islet of Xeronesi and the cape that defines the north side of Eleutheræ Cove near Heraklitsa village are, on the other hand, wholly of limestone uncontorted and stratified horizontally, with numerous quartz veins in the more decomposed and slaty beds. And it is here that the junction with the granite comes down close to the coast and can be seen some two kilometres inland on the hill slopes. The harder limestone weathers but little and the junction all along, with the friable granite which takes more rounded contours, is quite clear. It might be

said, in fact, that the main junction of the coastal granite outcrop occurs roughly along the ridge of Symbolon, with a tendency to fall more to the south side than to the north. The geological importance of this junction in its bearing on the identification of the main gold-bearing regions of Pangaeum I must leave to the metallurgists.

Pangaeum itself is composed almost entirely of crystalline and semi-crystalline limestone. Its base on the north and south-east sides is made up mainly of beds of decomposed limestone and schist, rich in quartz veins. The natural earth in the valleys is deep red in colour, being strongly impregnated with iron oxide. Iron abounds in many shapes, and large numbers of weathered nodules of magnetite are found on the surface up to the height of about 1,000 feet. But above this level the limestone becomes increasingly crystalline, changing into fully metamorphosed marble of great hardness and whiteness. Here and there in the upper parts of the mountain, actinolite schists appear, usually compact in texture and green in colour.

The north face of the mountain is, as is usual in the Balkans, denuded of vegetation. On the south face and in the great ravines on the east and south-east sides, however, there is abundant forest, consisting of chestnuts of great size and age at the lower levels, beech and hornbeam at the levels from 2,000 to 4,000



THE ANCIENT NEOPOLIS.
A view of the beautiful town of Kavalla, the ancient Neopolis, as typical a Greek colonial foundation as one could find in Greek waters.

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feet, and particularly in the thick wood above Nikisian known as Dena. About the 5,000 feet level the larger trees cease altogether and, except for occasional dwarf fir, there is nothing.

The stratification of the crystalline limestone is mainly horizontal. Ascent to the summit, however, is rendered difficult chiefly by the falling away on the east and south-east sides of much of the rocky faces, leaving difficult cliff barriers. Paths from the north-west are, on the other hand, easier. The main path, constructed or reconstructed during the war when the summit of the mountain was held as a Bulgar observation post, leads from the Monastery of Eikosiphoenisses over a ridge known as Chamlaki, and then skirts the cliff that overhangs the valley of Nikisian and Dena wood. The path passes through Dena up a small watercourse which is the only passage upwards through the cliff-barrier. Thence to the summit the gradients are less heavy.

Near our camp on the mountain was a large cave which I had discovered on a previous visit. It is known to the monks of the monastery near the foot of the mountain as Asketotrypo or "Monk's Hole." We managed to explore its every crevice by the aid of acetylene lamps, and we carried out a short excavation of its soil to see if there were any traces of human habitation. The results were interesting. The cave had been inhabited in the Neolithic Age and we found many fragments of coarse pottery of Neolithic type. We also found several bone awls and a flint flake which was of interest since no flint is found nearer than some forty miles away. Most interesting was a very neat stone-axe of green-stone, very small, which must have been made in the cave itself, since the stone of which it is made is found just outside the cave. This was ample proof of occupation, probably of a temporary character, in the Neolithic Age.

The remains were very few and the soil thin, and we found nothing else of this period. There was

certainly no trace of any kind of Palaeolithic date, a negative conclusion of great importance. The next period of occupation was not until Roman times. Remarkably enough there was nothing Greek of any kind. The Roman remains were late and were those of huntsmen who had taken temporary refuge in the cave. Their vessels of clay were all water-vessels—and water is scarce on the mountain. The plentiful remains of bones of wild animals, in which those of wild boar and birds predominated, showed that the hunters had feasted in the cavern. The bones all showed signs of having been used for food and were all

fragmentary. There was no trace of miners and the cave was natural. It had had nothing to do with the gold-mining. Indeed we were driven to the conclusion that at the higher levels there had been no mine-prospecting at all. Only in the plain, in the water-courses down the sides, and on the foothills are there definite traces of mining.



THE ROMAN BRIDGE.

Built at an important junction of streams, the bridge would seem to have connected the northern parts of the plain with the settlements at the foot of Pangaeum.

After leaving the cave I was able to investigate several sites in the neighbourhood. Some unusually fine pottery fragments from Dikili Tash, near Philippi, found on the surface, deserve mention, since the only excavation hitherto made at this important site (in 1921) has not been published. Opposite Dikili Tash on the extreme west side of the plain is a mound similar to that of Dikili Tash. It lies in the marshes at the foot of the castle of Antiphilippi.

The main centres of mining activity in Pangaeum have still to be found. It is unlikely that there were any very large settlements of peoples in historic times along the west sides of the Philippi marshes since lateral communications between Pravi and Nikisian villages are not so easy, particularly in bad weather, as those between the villages along the north side of the mountain between Kormista and Rodoleivos. From these villages access is easy to Drama, and so to Philippi and the sea coast. The high ground between the roots of the mountain and

(Concluded on page 192).

The Rat River Route to Alaska.

By Lady Vyvyan.

With two Indian guides the author and a companion recently made an adventurous journey from the Mackenzie Delta to Alaska by way of the Rat river. Only one white woman had previously covered the ground much of which lay through treacherous country and was traversed in a precarious native canoe.

THE Rat river was the keystone of our journey from the Mackenzie delta to the divide that overlooks Alaska on the west and Canada on the east. As soon as the ice, in melting, gives way to that brief northern summer, a Hudson's Bay Company steamer goes north on the 2,000 miles journey down the great Athabasca and Mackenzie rivers. It carries mail and provisions to the settlements that are in some places two hundred miles apart, earning a royal welcome from each cluster of log cabins; from Chipewyan and Fitzgerald and Smith's Landing, from Resolution, Hay River, Providence, Fort Simpson, Wrigley, Fort Norman, Fort Good Hope only a few miles south of the Arctic circle, Arctic Red River, and finally from Aklavik which lies on the Mackenzie delta within fifty miles of the Arctic Ocean proper.

Between Fitzgerald and Smith's Landing there are sixteen miles of unnavigable rapids; passengers and cargo are transhipped by rough cars over a rough road that winds between poplars, cottonwood and spruce trees, to the second steamer. Gwen Dorrien-Smith and I, leaving Waterways by the first boat of the season on 4th June, travelled those 2,000 miles, a journey full of interest but only a prelude to our struggle with the Rat river.

We reached Aklavik on 23rd June. This settlement, ignored by many an atlas, includes a convent of Gray Nuns of the North who do medical and mission work among the Indians, a Church of England Mission House and Church, a Hudson's Bay Company trading store, wireless station, North Western Mounted Police station and a population, white and Indian and half-breed, of trappers and traders; also, during our short stay the mud beach of the river was peopled by Eskimos in tents just come in to meet the steamer and to outfit their little schooners for the white whaling season. A judge and barristers for defence and

prosecution came north with us to try an Eskimo for murder and we attended this trial in the ship's saloon. A North Western Mounted Police officer had taken a year to bring in the accused man from the Coppermine river district. He was found "Not Guilty" by a jury of six scallywags, his crime having been merely the despatch of a fellow-Eskimo; had he killed a white man, justice would no doubt have declared itself in other terms.

All across the continent we had received warnings against our chosen route into Alaska. In 1898 many a gold-seeker went into the Klondike country via the Rat river, and a disastrous route it was; many turned back overcome by the difficulties of the trail, others sweated blood to carry provisions to Fort Yukon and found on arrival that provisions had no value there. We were told that only one white woman, a missionary's wife, had been up the Rat river and over the divide into Alaska and that she had travelled in a skin boat. We had provisioned at Edmonton. At Aklavik we obtained through the Hudson's Bay Company our eighteen-foot Peterborough canoe and our two guides, Lazarus Sittichili and Jimmy Koe,

Indians of the Loochoo race. We hired a gas boat at Aklavik and steamed south again for seventy-five miles down the Huskie river, a branch of the Mackenzie delta, until we came to the mouth of the Rat, a peaceful sluggish river bordered by willows at first and then by spruce firs overlooking the high mud banks. We steamed up the Rat for twenty-five miles, then the gas boat left us in a wilderness of fir-trees and water, alone with our guides, our canoe, tracking-rope and three paddles, the tent and provisions for three weeks.

We camped on the spongy muskeg near Destruction City but could see no sign of the Klondikers' old camp. Our troubles were beginning, for as we pitched our tent, mosquitoes



ON THE RAT RIVER.

For ten or eleven hours a day the Indian guides worked the canoe by slow degrees up the river.

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filled the air. We were in the land of midnight sun; the pointed trees made golden reflections in the water towards midnight, the banks being too high to allow the sun's rays to fall directly; a mountain range ahead was amethyst turning slowly to rose pink, clear cut in outline, diaphanous in colour. We crawled fully dressed into the shelter of our mosquito nets and slept on a bed of Ledum, moss and cranberry.

A hundred yards above that camp the water ran more swiftly and thereafter we had to walk along one bank or another, plunging through willow and alder, stumbling over stones or through muddy shores, while our guides, often waist-deep in ice cold water pushed the canoe through rapids that alternated with shallows. Now and then they would ferry us across a rapid that we might follow a more open bank; sometimes we lost sight of them as they disappeared behind an island overgrown with willows, and once we lost them in this manner for over an hour. We were standing in the muskeg on a bank ten feet above the current, straining our eyes across islands and the intervening channels to see those two men hauling at the rope or pushing and pulling the canoe, until at last we heard a shout and there was Lazarus walking up the bank on our side of the river; swift water had turned them back, they had crossed over to our bank and now it was time to camp. We returned to Jimmy and the canoe and pitched our tent in a spruce wood.

We could seldom find smooth going on the banks; the best stretches were elbows of the river where spits that bordered shallow water were covered with stones, and we could make our way across while the guides toiled round the curve. The worst stretches were those tangles of willow and alder with leaves dripping from the frequent showers of rain, with every twig threatening our veils that were now become more precious than wealth to us, so that we had to advance shielding our faces with our arms. The mosquitoes never left us and after a while we learnt to seek wind or any little current of air as a dweller in the desert will seek for a few inches of shade, for sometimes on an island or a spit of land where fresh air blew, the mosquitoes would thin out and then we could raise



A TYPICAL ESKIMO TENT.
An Eskimo outside his tent at Aklavik. This settlement, ignored by most atlases, includes even a wireless station.

our veils for a moment. But for the most part we struggled up that steamy, winding river-bed with hardly a breath of wind to scatter the mosquitoes which were always humming in our ears, buzzing round us in a cloud, biting us at neck and wrist and ankle despite all our precautions with veils, puttees, gloves and elastic bands; with thunder clouds overhead and many a shower of rain; with the perspiration streaming from our imprisoned faces; with anxious glances at the water which might prove at any moment too rapid or too shallow to allow the progress of the canoe.

Sometimes there were side creeks running into the river; we had to wade across these unless they were too deep when we would wait for the canoe to act as ferry boat. Our worst obstacles were the mud streams that flowed from some of the hills splaying out fan-wise as they reached the river. Our guides, of course, had a far harder time. For ten or eleven hours a day those men worked our canoe by slow degrees up the malignant river. They could seldom use the tracking rope for the banks were mostly overgrown by shrubs and trees; they would be wading nearly all the day, sometimes ankle deep as they dragged and scraped the canoe with its four hundred pound load of stores and camp equipment over stones in shallow water, sometimes waist deep, battling with the current, feeling carefully with their mocassined feet for foothold on the boulders in the river bed; sometimes they would stop and fell a snag of fallen timber in order to keep near the bank. Occasionally we would wade across to an island to find more open space, always keeping our eyes on the canoe in case at the upper end of the island we should find ourselves isolated from either bank by a torrent of swift water.

We soon established a routine. One of us would crawl out at six o'clock to wake the guides; we would eat our breakfast standing in the smoke of our fire, rubbing oil of citronella on our faces as temporary defence against mosquitoes while we ate and drank. When the canoe was packed and all our goods lashed in, the guides, who always slept in dry clothes would crawl under their mosquito nets and change into their wet clothes of the day before; after all those hours

wading it was impossible to dry their clothes in a night. As for ourselves we never changed our clothes on the Rat river, only dried out each evening standing close to the fire and turning round and round before we went to bed.

Bird Watching.

Conditions were not favourable for watching birds. The mosquitoes tormented us in mind and body so that we felt bound always to be moving on and we dared not raise our veils. Between Aklavik and Fort Yukon bird life was not abundant but we noticed the following species: brown-eagle, white-headed eagle, tern, grackle, whisky-jack, semi-palmated plover, yellowshank, sandpiper, swan, white-headed sparrow, northern raven, white-fronted goose, yellow warbler, American robin, loon and red-throated loon. On the whole, however, bird life was scarce and game was even scarcer.

During our travels in Canada we found and pressed 266 species of flowers. The flora of the Rat was beautiful and varied; there were masses of delphinium, aconitum, polemonium, a pink pedicularis nearly two foot high, vaccinium, oxycoccus, pyrola, pinguicula, linnaea borealis, many kinds of vetch and a handsome yellow rumex with an edible succulent stem, dryas octopetala, a yellow senecio, a variety of asters and erigerons and sheets of golden arnica. The two most beautiful flowers grew on stony shores of the river; these were epilobium latifolium with large rose-coloured flowers and silver leaf, and the pale yellow papaver nudicaule. Four varieties of tree were predominant, spruce and alder, willow and white poplar.

All the time the river wound in endless convolutions, all the time those interfolded hills enclosed us; the sun shone after those first days of rain and we were shut into a steaming valley with the water ice cold from the snow that lay unmelted on the height of land; our progress was perhaps a mile an hour. On the afternoon of our seventh day we came to three forks of the river and could see open country ahead of us with mountains beyond; some of the mountains were barren, terra-cotta coloured, others were overgrown, the lower half by spruce trees and the upper by caribou moss. The Fish river, a mountain torrent with a waterfall, flowed in from the left bank.

The Rat river now changed its character; there were no more rapids and we were in treeless country. The torpid stream went looping unseen through a great stretch of muskeg, for it flowed some fifteen feet beneath the level of the land. Our guides were able to use the paddles while we cut across inside the loops of the river, always ankle deep in the spongy moss

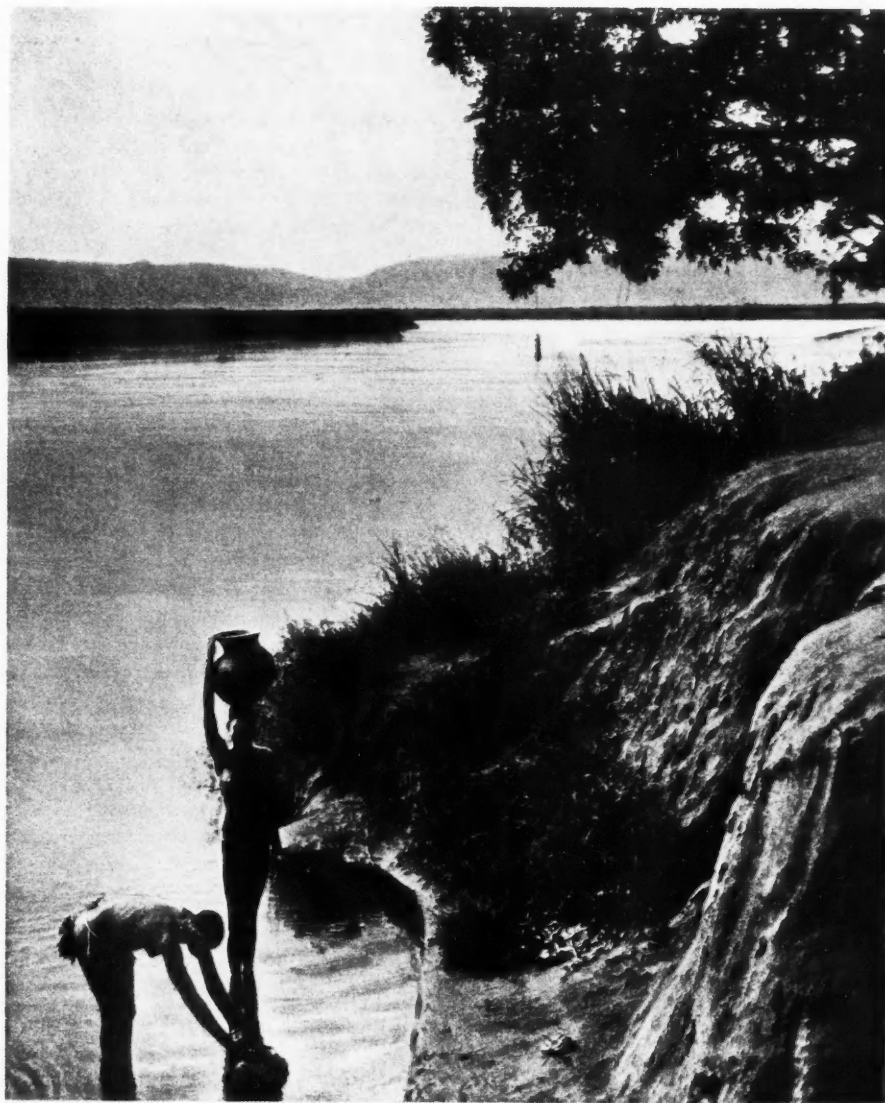
but ahead of us we could see a nick in the mountains and beyond that nick was Alaska.

We came to a chain of peaceful lakes and there we were on the divide, paddling across Loon Lake set there with unrippled surface to reflect the barren mountains; a mountain sheep was hurrying up the slope on our right, but there was no other sign of life and the peace of Loon Lake was deep as the peace of annihilation, but driven on by mosquitoes and the habit of movement, we could not linger in that world of silence and reflections. We had to make four short portages, the longest only half a mile, and we pushed the canoe through muskeg swamp, returning for the loads. Then, while still on the height of land, we were teasing our way along a channel little wider than the canoe, overhung by shrubby willows. From these entangled willows we made one last portage, launched the canoe on the little Bell river and went speeding down towards Alaska, encountering shallow rapids.

On that ninth evening of our canoe journey we came to the Bell river, wide and calm and almost free of mosquitoes. In that camp we washed and changed our clothes. Next day we paddled to La Pierre House, marked clearly on all maps, but we found only one deserted hut where Jackson Brothers of Fort Yukon keep some stores; twice in each summer they arrive there by gas boat to trade with Indians who come in from the surrounding district. A mile below this cabin we saw a grizzly bear come down to drink at the margin of the river, a strange looking animal, creamy-white with a hunched outline. Jimmy shot it and we supped off bear steak and breakfasted off boiled bear, tough, unpalatable meat. Fifteen miles below La Pierre House our guides were due to leave us, having paddled us safely through a rapid near Sinclair's Rock; they were to walk back ninety miles to McPherson.

Haunting Silence.

There we were alone and we could almost hear the silence of the Arctic, a silence that, once heard, must surely haunt a man for ever. We paddled down the Porcupine and the Yukon to Old Crow, doing the 115 miles in four days, and there we procured an Indian guide who paddled us down to Fort Yukon. Between Aklavik and Old Crow, some three hundred miles, we had seen no human settlement. We arrived at Fort Yukon on the twentieth day out from Aklavik; there we sold our canoe, found many friendly people and waited for the tripper-laden steamer which should take us out of the country via Tanana and Nenana. Thence we took the train to Anchorage and Seward where we caught a steamer bound for Seattle.



THE VICTORIA NILE, UGANDA.

East Africa has been described as a land of contrasts. Side by side with the European, to whom the microphone brings wireless messages from Europe, lives the almost naked negro who in habits and customs remains as the Pharaohs recorded him in picture and sculpture. The photograph is reproduced by courtesy of the German-African Lines.

Georgian Days.

By W. E. D. Allen.

"Georgia has its own fascination. The beauty of its landscapes, the charm of its people, the provocative mystery of its past, the vivid drama of its present, have an attraction which is not to be found in many greater lands." Mr. Allen is the author of "A History of the Georgian People," the first record of the country to appear in English.

WHEN, in the first years after the war, the favour of the great powers was withdrawn from the three newly established republics of Armenia, Georgia and Azerbaijan and the British troops departed, Georgia disappeared at once from the newspapers and fell back into that peculiar obscurity which has always enveloped her. This obscurity is peculiar, for while everyone has heard of the Armenians and most investors have heard of Baku, the name Georgia conveys to the average intelligent reader that State of the American Union "where the peaches come from," and whence most American visitors to Europe allege that they themselves come. So let us quite clearly locate Georgia.

Geographically, Georgia is sandwiched between Russia and Turkey. On a modern map, it will be described as the western part of the Soviet Republic of Transcaucasia, which forms in fact the most southerly "province" of the Soviet Union. It occupies about the same area as Ireland, and it has a population of just under three millions. It takes about a week to get to Georgia from England, whether you go out by rail via Moscow and Baku (or by motor bus from Vladikavkaz across the Daryal Pass) or whether you go by steamer from Stambul to Batum.

The Old and the New.

There is romance about Georgia. There is at once the romance of the old and the romance of the new. I first came into Georgia from the north. At Vladikavkaz—"Ruler of the Caucasus"—the proud foundation of Paul Potemkin, the favoured cousin of Catherine the Great's lover, Gregory—I stayed the night in a broken-down hotel, which had the sinister association proudly claimed by the host—that an English colonel had been shot there in the early part of 1918. At five in the morning an open touring car with the passengers on each other's knees took the long way over the Daryal Pass to Tiflis. The journey was not very comfortable, but the pressure was a little relieved by an accident which occurred to one of the passengers at Passanauri. The journey through the pass even in June is wet and cold and at the summit the road had been recently cleared by snow ploughs. At Passanauri we were in another world. The sun beat down through the lofty chestnut trees in front

of the inn. The hot reek of Asia suffused the air—that compound of animals and men, dry earth and timber. Pumpkins and bunches of miscellaneous herbs hung from the doors of the two-roomed wooden huts. There were giant water melons to be had, small cucumbers, and uncooked liquorice plant.

Gently Sloping Hills.

A big brown bear was chained to a dust heap near the inn door. It was the bear who caused our casualty. One of the passengers, a small fat sandy haired Trades Union official, who seemed to regard boxing as a superlatively English characteristic, had repeatedly during our halts invited me to "make box." He now proceeded to box the bear, who responded by gently patting him in the stomach. Half-an-hour later we had to leave our friend, after much vomiting, still feebly panting under a chestnut-tree.

The road led down into Georgia, through a landscape of gently sloping hills, covered with a thick forest growth of oaks, chestnuts, and beeches. Generally away from the road, were scattered along the hillsides the small villages of the Georgians, built of log cabins of the type characteristic of all alpine lands. We were leaving the region of the mountain clans and coming into the cultivated countryside of the old East Georgian kingdom of Kartli. The Daryal Pass lies through sparse uplands which are inhabited mostly by the Ossetins, a tribe probably of Germanic origin, the descendants of the Alans of classical times. They still brew their beer in the German way. To the east of the pass, in the upper valleys of the White and Black Araghvi, dwell the rudest and least tutored of the Georgian mountain clans, the Khevsurs, who still wear chain armour on feast days, and are popularly reputed to be descended from lost bands of Crusaders, and the Pshavs and Tushes, who always retained a semi-communal way of life and who have still many pagan rites and customs.

The Georgian military road—whereby the power of Russia has for the last hundred years been riveted on the Caucasian lands—follows the shallow stream of the White Araghvi, until it falls at Mtskheta into the broad yellow current of the Kura. The Kura is the great river of Eastern Georgia, and its valleys with those of the numerous tributaries which fall

to it from north and south is in fact the whole land. Eastern Georgia is an alpine country, separated from the western provinces by the high rib of the Suram range. Its geography is easy to grasp—the great river Kura with the towns set at the junctions of its lateral tributaries. And as you follow the route of the Kura, you may see how the country is at once so infinitely ancient and so very new.

Along the middle stream of the Kura is the cave city of Uplis-tzikhé—"Castle of Tubal"—with its palaces and barracks, its baths and chapels, its streets and shops, carved out of the yielding rock. Lower down is Urnisi—"the City of Jews"—founded according to legend, by the son of Barabbas. Here also are Kaspi and Kartli or Armazi—the City of Ormuzd—the sites most likely of a great Bronze Age culture. Here again, between the Araghvi and the Kura, rise the crumbling chalets and the great Cathedral of Mtskheta—"the City of Meshek"—where a conquered Georgian king received Great Pompey, and where in later ages were buried the mediaeval kings, with the Royal Arms of Judah on their tombs, for the House of Bagrationi claim descent from David and Bathsheba.

The twentieth century emerges suddenly out of the

arid hills that lie between Mtskheta and Tiflis—the great Zagaz electrical plant throws its bulk of steel and cement across the turbulent Kura. The suburbs of Tiflis are already near. The ugly white buildings of the Russian bureaucracy—the theatres, banks and museums line the long stretch of the old Golovinsky Prospekt, now renamed not very appropriately, the *Rustaveli*, in honour of the great epic poet of the Georgian Middle Ages. Trams clang their way through the crowd, as all Tiflis swarms in the Golovinsky to enjoy the velvet warmth of the Eastern night. In a crowd the Georgians are animated, quick and friendly like any southern crowd. They have the electric mass-consciousness, the alert tenseness of the *agora*. You can sense the mood here, of a vivid excitation, a restlessness, as if it were in Palermo or Athens. Tiflis, the scene of a hundred sieges, of sack and massacre, passed through the revolutionary years without any great tribulation. Here life is easier than in Moscow or the other northern cities. The Soviets do not stir unnecessarily the smouldering fire of Caucasian fury, and the climate and the proximity of villages teeming with food and vegetables make life, at least in summer, not so disagreeable as in the grim industrial centres of the Five Year Plan. And so the crowd swarms



A VIEW OF ATSKVERI (ATSKUR).

The illustrations are reproduced from "A History of the Georgian People" by courtesy of Messrs. Kegan, Paul.

gaily, excitedly, in and out of the open-air cinemas, through the garden restaurants, up to the roundabouts on David's Hill, down into the underground drinking-rooms.

But Tiflis—in spite of the loud-speakers every hundred yards along the Golovinsky, in spite of the armoured-cars, the posters and the trams, in spite of all the appurtenances of a quarter-bred Communist *megapolis*—still remains a teeming Asiatic slum. The ox carts of the Kakhian peasant, in tunics and round caps, trundle slowly down the street. *Partisans* from Muslim Daghestan, in the ragged *cherkesskas*, with *kinjals* swinging from their belts and rifles slung over their shoulders, scowl at the passers-by. The O.G.P.U. agents, sombre in their black leather uniforms, carry heavy revolvers strapped to their thighs. Uneasy Armenians, irredeemably *bourgeois*, who have failed to insinuate themselves into the ranks of an all-pervading bureaucracy, still carry on mysterious transactions in smuggled goods.

Mediaeval Domes and Towers.

The Georgian Churches, great Sioni and a hundred others, still dominate the architecture of the city with their mediaeval domes and towers. And in the warren of the Tatar quarter, the thousands of Muslims—Kalmucks and Avars and Kumyks, Chechens and Tats and Turkomans, Persians, Kurds, Turks and Ajars—pursue their thriftless life, breeding, chaffering and lounging, wandering, praying and starving, as only they know how. Horror sometimes stalks the streets. I saw men stabbed in fights on two nights in one week. I have seen, in the early hours of the morning, pathetic little batches of men—"outlawed" officers discovered in hiding, turbulent *Kulaks*, "corrupt" officials—marched off under heavy guard, to dig their own graves before a fusillade of revolver shots behind one of the hills beyond the suburbs. Broken men, women sick and diseased, starving waifs, are met with continually on all the street-corners, particularly old soldiers and refugees of the War from the Turkish provinces, disfigured by frost-bite. All things that are fixed—the castles and cities of the forgotten past that strew the land, the bold new plants, the railways and the wireless installations, the aerodromes and schools, seem equally detached from the fluid mass of happy, wretched, fierce, kindly humanity, which makes up this Asiatic population, equally irrelevant to their being, foreign to their genius which is always for the present.

Tiflis is not Georgia, nor even a Georgian city. Probably not more than a third of the population is of Georgian speech. Tiflis is a strange barbarian

megapolis—a great camp of the Asiatic Communists. Perhaps in these days it resembles in its spirit the city-compound of the Mongol conquerors, of Chinghiz Khan at Karakorum. To find Georgia and the true Georgians you must go into the provinces. There is Kakheti, to the east of Tiflis, two long valleys lying under the great bastion of Daghestan. Kakheti is a land of sunlit oak forests where all animals, pigs and sheep and oxen grow to a remarkable size. The men too are the biggest among the Georgians. Pheasants abound in the valleys of Kakheti and it may, in fact, be the original home of *Phasianus Colchicus*.

To the south-west is the alpine province of Meskhia, which marches with Turkey and of which, in fact, a large part has become Turkish territory. If you leave the Transcaucasian railway at Gori and follow up the long ravine of the Kura, past the popular resort of Borjom, you come into the lake country beyond Akhaltzikhé, where the Kura takes its source. Akhaltzikhé—"the New Castle"—was the capital of the powerful family of Jaqeli, who between the fourteenth and sixteenth centuries became virtually the independent rulers of the great mountain ranges which stretch between Erzerum and Batum. Akhaltzikhé was a principal centre of the slave trade, and here the so called *Circassian* slaves were collected from all the districts of the Caucasus, but mostly from Georgia, and distributed via the *entrepôts* of Trebizond and Tabriz, to the harems of Turkey and Persia. Sir John Chardin, the Huguenot jeweller at the court of Charles II, who travelled through Georgia to Persia, states that 12,000 slaves a year were collected from one province of Georgia, and he gives an interesting account of a certain Georgian nobleman who sold his wife and six priests to the Turks in order to provide for his mistress.

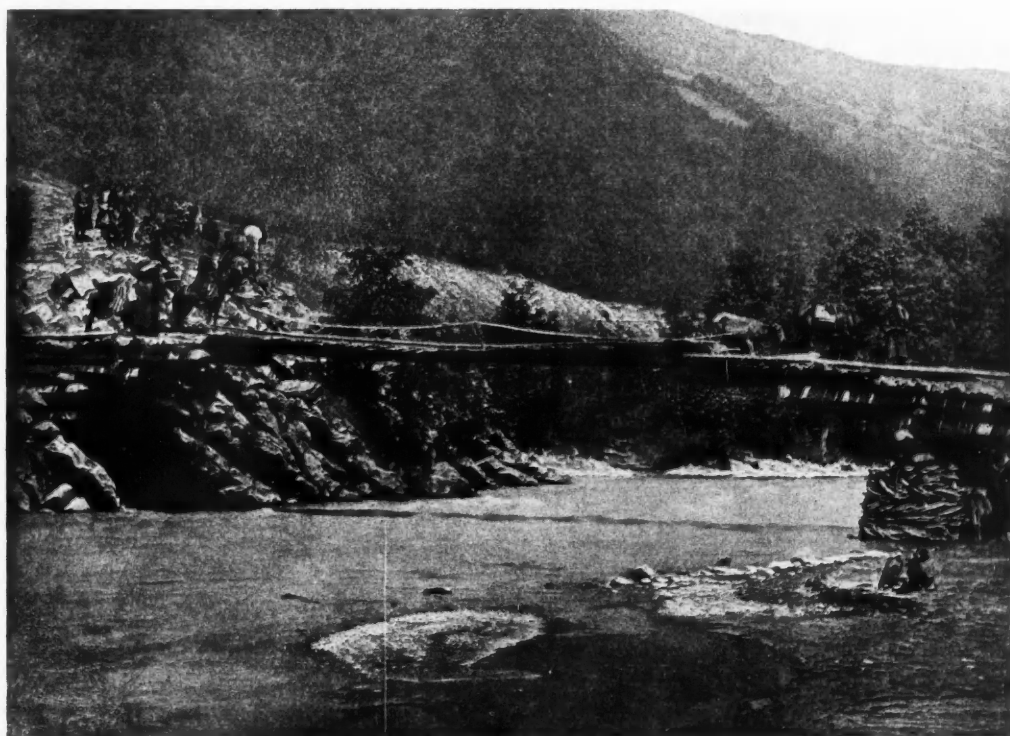
The "Red Riviera."

The Suram mountains, which form a bridge between the main chain of the Caucasus and the Armenian Highlands, divide Kartli or eastern Georgia from the two western provinces of Imereti and Mingrelia, which consist of a great alluvial plain, crescent-shaped, draining to the Black Sea. Here the traveller may enjoy among the orange-groves and the tea and tobacco-plantations of the coast the mild winter climate of the "Red Riviera." At Gagri, Sukhum, and other delectable bays along the luxuriant coastal strip which lies to the north under the high Caucasus, the honey-handed proletarians of the Russian cities descend to enjoy the palaces and hotels which once solaced and revived the jaded aristocracy of the Imperial regime.

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A BRIDGE IN GEORGIA.
The precarious-looking bridge over the river Magarauli into Pshaveti.

In strange contrast to the comparative sophistication of the coastal resorts and of the oil-port of Batum, is the stretch of coast which runs westward from the Soviet frontier to the Turkish port of Trebizond. The primeval forest which comes down from the snow line of the Pontic Alps to the shingly beaches of the hidden villages by the sea, shelters the shy fishermen and the elusive pirates and smugglers of Lazistan. The Laz speak a dialect of Mingrelian, the language of Western Georgia. As sailors they go much abroad to Turkey and the Levant ports, and many of them are porters and dockers in Stambul, but no one has really explored their home valleys, and Lazistan remains one of the least known corners of Asia.

The Georgians are a simple nation of peasants, sailors and mountaineers. Their language, the origin and affinities of which are obscure, has been compared to Basque, and in character and manner of life they are in many ways like that other small people inhabiting mountain valleys by another sea. Like the Basques also they have been unfortunate in their struggle to

achieve political independence, but like the Basques they are remarkable in that they produce men who rise to leadership in all the surrounding countries. The part which the Basques have played in the politics of Spain, France and the Argentine is paralleled by the rise of individual Georgians throughout the centuries in Byzantium and Muslim Egypt, in Turkey, Persia and in modern Russia.

Georgia probably holds archaeological secrets of unparalleled interest. The descent of the Georgians from the biblical tribes of Tubal and Meshech has been fairly established. Their connexion with the ancient Kingdom of Urartu or Ararat is suspected. And there in the Mingrelian forests the site of Aea, the ancient city of the Argonauts, may yet be unearthed.

Georgia has its own peculiar fascination. The beauty of its landscapes, the charm of its people, the provocative mystery of its past, the vivid drama of its present, combine to produce an attraction and to create a significance which is not to be found in many greater lands.

Off the Beaten Track in Japan.

By the Rev. Walter Weston.

Lately Hon. Secretary of the Japan Society.

The late Lord Bryce said of the Japanese Interior that there is probably no other country which exhibits such an endless variety of natural beauty. The author describes many unusual experiences while travelling off the beaten track, "among the artless dwellers of these splendid solitudes," whose ways of life are those of a thousand years ago.

IN a fascinating volume of travel sketches entitled "Below the Snowline," Mr. Douglas Freshfield has given the lie to the discouraging dictum of disappointed globe-trotters that "Japan has been spoilt." Mr. Freshfield is a former President both of the Alpine Club and of the Royal Geographical Society, and is himself the leading traveller of distinction to wander "off the beaten track" into the heart of Japan. "Japan is only spoilt," he declares, "for those who have not the enterprise or the energy to go and look for it outside the European quarters of the great seaports. Travel up-country and you will soon escape from European influences and disfigurements. You will find that the lakes and mountains, the towns and villages, the temples and hill-shrines, the rustic inns and baths, have lost none of their native character and fascination."

Mr. H. G. Wells in his "Outline of History" has informed his readers that "an allied squadron (1865) at anchor off Kioto imposed a ratification of the treaties which opened Japan to the world." Not only is the date incorrect, but the declaration itself is equivalent to stating that the peace terms at the conclusion of the Great War had been dictated to Germany by an "allied squadron" at anchor off Berlin! In this short article we will join company in a journey away from the busy "Treaty Ports" on roads that open out a succession of striking scenes and introduce us to regions that reveal another world. At times we shall question whether we are living in the twentieth century or the tenth.

Those scenes more than deserve the description of the late Lord Bryce, who declared when travelling in the interior with the present writer years ago that

"there is probably no other country that exhibits such an endless *variety* of natural beauty," with its flowery moorlands, its enchanting valleys, and its snowy glens. Mighty volcanoes of varying ages now displaying an almost perfect cone, or again, raising but shattered remnants of their former selves, alternate with great granite cliffs and towers that merge into the pointed porphyritic peaks of a far earlier age.

An abundant seasonal rainfall combines with regular north-westerly winds from Siberia to produce on the one hand a heavy snowfall over the western regions of the main island, and on the other a range of vegetation that intermingles rich sub-tropical forms with splendid alpine flora of intense brilliancy and luxuriance. This rainfall is one of the most active forces that contribute to give the countryside its most characteristic features. Sometimes it introduces the traveller to the roaring mountain torrents and thundering waterfalls of some wild secluded ravine, and yet almost the next turn in the winding valley displays a clear untroubled pool, the home of trout of various hues, or tarns of solemn stillness wholly hidden in the dark recesses

of dark groves of magnificent forest trees.

The deep snowfall itself, at times, on the western flanks of the great mountain backbone of central Japan, *entirely* buries a whole village. Access from house to house is then maintained by arcades that form a tunnel on either side of the street, and the identification of official places of importance is assisted by signboards rising above the roofs to indicate that

"The post office is down below"; "You will find the police-station underneath."

Over the whole length and breadth of these



IN THE JAPANESE ALPS.
A view of Hodaka-yama (10,150 ft.), the highest granite peak.

unfamiliar mountain regions of Central Japan you will find the *onsen*, the native "spa" or hot spring so dear to the heart of the folk of the *inaka*, the true countryside of this extraordinary land. They are most frequently found near the foot of the remoter peaks, at an altitude of some 5,000 feet. They are frequented by the sick who go for healing and by the sound who go to keep them company and to kill time pleasantly. The sexes usually bathe together, unclothed and untroubled, for in Japan—at least in the as yet unsophisticated countryside—the nude is seen but not noticed, and all is perfectly

natural and modest. At Shirahone, an ancient *onsen* in the southern part of the Japanese Alps which has been in the possession of the family of the present proprietor for over three hundred years, I was informed that the large round water-worn boulders I noticed on the edge of the principal public bath-tank were for the use of habitués of experience. These would spend two or three weeks at a time in the water without once leaving it, unless obliged, and the stones were laid in their laps when "going to bed" at night so as to prevent them from turning turtle and getting drowned in their sleep! The accommodation is usually plain and inexpensive. On one occasion after spending a part of three days at Koshibu, in the Southern Japanese Alps, in the best room available, though subsisting mainly on my own provisions, I had considerable difficulty, when leaving, in inducing the old landlord to present me with his bill. "You see, sir," he said, "I have never entertained an honourable Mr. Foreigner before and I really don't know what to charge." At last, however, I succeeded in bringing him to the point, but only with intense reluctance he faltered, "Do you think that three-halfpence would be too much?" Years later a famous Japanese climber, my old friend Usui Kojima, wrote to tell me that my kindly host, with most of his family and his visitors at the *onsen*, had been swept away with the huts themselves by a frightful inundation. "Though many of the bodies," he added, "were found in the valley a few days after, the poor old

man's has not yet been discovered. It is now believed that he has gone at last to the Pacific Ocean through the valley of the river Tenryu."

It is this "human interest" that invests one's wanderings off the beaten track in this wonderful land of contrasts and apparent contradictions, with such unusual charm and constant surprise. Some years ago, after making the first ascent of the famous granite peak of Hô-wô-zan, in the Southern Alps of Japan, I became the object of remarkable attention on the part of the quartette of hunters who had accompanied me to the

foot of the final point, beyond which they had failed to climb. Near the spot at which they stopped short they turned aside and proceeded to stalk a chamois which suddenly engaged their attention and with the carcass of which they greeted me on my descent. Laying it at my feet they cut out its liver and with great pride offered it for my immediate acceptance and consumption. "For," they assured me, "this will not fail to impart to you those desirable attributes for a mountain climber—nimbleness, sure-footedness, and strength." A few days later they came to me with an almost equally singular request—that as I was privileged to make the first successful ascent of Hô-wô-zan, I would, at my own expense, build at the foot of the final peak a splendid shrine in honour of the mountain divinity and become its first *Kannushi* (guardian priest). It struck me as the strangest offer of preferment and the most novel proposal for church-building that ever fell to my lot!

One had often occasion to rejoice that few of the blessings of civilization have yet been pressed upon the artless friendly dwellers of these splendid solitudes. From most of them may they long be spared!

An ancient Japanese record called *Shoku Nihongi* ("Famous Scenes in the Land of the Rising Sun") tells us that in the year 701 A.D. "the mountain road in the province of Mino was first opened as a thoroughfare," and this highway is now, and has been for many centuries, known as the Nakasendô, "the Central



WORSHIPPING THE MOUNTAIN SPIRIT.

The bowed figure of a hunter on the summit of Yurigatake (10,400 ft.).

Mountains Road." It links the present capital Tokyo with the former one Kyoto, and its course passes through the great mountain mass in western Central Japan which is mainly drained by the famous river Kisogawa and its tributaries. The region exhibits some of the most romantic scenery in the land, broad bright plains at either extremity connected by wild torrent valleys and bearing some of the most magnificent forests imaginable. The nature of the terrain traversed by the Nakasendō can be at least partly understood by the fact that when the great strategic Central Railway running through this district was under construction, its stretch of a hundred miles occupied fifteen years (1896—1911) during which no less than ninety-five tunnels were driven, mainly through granite hills, and over 350 bridges were thrown across the great river and its lesser affluents.

It is on one of these that we are introduced, on the moonless nights of the summer months, to the romantic sport known as Ukai, "cormorant-fishing," for trout, which takes place on the river Nagara-gawa, on the banks of which lies the important town of Gifu. Like many other pursuits it was derived from China, and is mentioned in the *Kojiki*, the earliest Japanese book extant, as in vogue over twelve hundred years ago. Each of the several boats taking part has a crew of four and its movements are controlled by a steersman manipulating a big scull in the stern. The skipper himself is a person of great importance and from his point of vantage in the bow regulates the activities of a dozen cormorants at once. These are held in leash by tough cords of spruce fibre which are connected with a belt of hemp that encircles the body of each bird. The mate is usually posted next to him and is responsible for four more. The remaining member of the crew affords a sort of comic relief. While his chief duty is to tend the decoy fire of a special kind of faggots, kept burning in the big iron cresset hanging over the gunwale on the port side, by his wild cries of admonition and encouragement he keeps the birds up to their work. He accomplishes this the more effectively with repeated

volleys of resounding blows delivered with a stout bamboo pole on the side of the boat.

The scene rapidly becomes one of weird fascination and wild excitement and it is hard to say whether the crew or their cormorants enter the more wholeheartedly into the spirit of the fray. The speed with which the birds dart to and fro after their bewildered quarry, ducking, diving, twisting and disappearing, renders it at times almost impossible for the eye to follow their movements. Each wears round his gullet

a ring of metal or horn, too tight to permit the swallowing of the larger fish caught. The amazing deftness and skill with which the master of the boat controls the mazy intricacies of the dozen reins he holds never for one moment allow one line to foul another. At the conclusion of the night's operations we may see the birds each ordered to his special basket for transport home in order of precedence by age. The first to enter the water is the first to leave it, and no would-be usurper is allowed to break the rule. They are creatures of unusual size, standing some two feet in height, and they are caught by bird-lime spread on the rocks of the Owari Gulf not far from the scene of their subsequent activities.

On the margin of the plain in which the town of Gifu stands rises a hill known as Kinkwazan, whose name "The Golden Flower Mountain" is doubtless due to the sparkling appearance of biscuit-tinted and coarse-grained granite of which this region is composed. From its summit, to the north-east, a remarkable prospect greets us of the lower end of the Northern Japanese Alps, through which the Nakasendō passes. The curious intermingling of volcanic peaks with the granite formation through whose surface they have burst forth recalls the observation of a famous Japanese writer when dealing with the characteristic features of the landscape of his country. "Were Japan a wholly granite country, her scenery, as well as the experiences of her people, would have been much more monotonous. But her numerous volcanoes and the constant movements of the earth make life intense and interesting!"



A HOT MINERAL SPRING.
Japanese bathing in one of the mineral springs which are to be found off the beaten track in the Interior.

Nearby stands the noted Entomological Laboratory of a well-known scientist, Mr. Sei Nawa. At the end of some thirty years of labour this tireless investigator had made the acquaintance of no fewer than ten thousand species of insects, represented here by over two hundred thousand specimens. In the grounds of the Laboratory he has erected a monument to the memory of these myriads immolated on the altar of scientific research. Here also is a shrine to the "Goddess of Mercy," Kwannon, with its thousand small images made of timber from the many Buddhist temples and Shinto shrines throughout the land which have been devastated by the ravages of white ants.

Striking up the valley of the Nakasendō (which is also, and more familiarly, known to the Japanese as the Kiso-Kaidō from the name of the Kiso-gawa, the river which bears it company over so many miles of its course) one is struck with admiration, and often with wonder, at the magnificence of the great forests which it traverses. These cover an area of over 1,500,000 acres, nearly all the property of the Imperial House. They are mainly composed of cryptomeria, cypress, pine, *chamaecyparis pifera*, and *thuya*, and have long been protected by laws of the sternest nature. Poachers injuring even a twig of them have incurred the penalty of being shot at sight. The quantity annually felled by the army of workmen employed represents a sum of over £250,000 sterling.

Some eighty miles up the Kiso-gawa from the great city of Nagoya, in the centre of the granite river-bed, a little rocky platform supports a shrine dedicated to the goddess Benten, who though popularly worshipped as the divinity of "Good Luck" is frequently also honoured as the Goddess of the Sea. Her shrines are often found on islands or by the seashore, usually giving her as a companion a serpent, the controller, or at least the symbol, of water in various forms. Her popularity and widespread worship are very natural among a nation of islanders and fishermen, whose fortunes are so bound up with the sea.

A striking vantage-point for viewing this delightful prospect with its pellucid waters and fantastic granite crags, overshadowed by the noble timber, clothing the precipitous sides of the ravine on either hand, is afforded by the small Buddhist temple of Rinzenji, well styled "The Shrine in Honour of Landscape Loveliness." Counterparts of this are found in far-sundered spots of similar natural loveliness scattered over the land. Of this, at least, an old native guide book has exclaimed with truth, "its noble character can scarcely be appreciated by the mind nor adequately described in language."

A few miles further on the romantic glen opens out on the warm sunny plain of Fukushima, of no great extent but noted as the centre of the administration of the Imperial forests and for its importance as one of the chief silkworm industries in this region. This precious worm is sometimes styled *O Ko sama*, "the honourable little gentleman," and during the month of August, the period of its "intensive cultivation," the constant attention of nearly every member of each household is occupied by the claims of his voracious appetite. It is believed that at this period of his brief existence any harsh, noisy, or ill-mannered conduct on the part of his attendants will seriously affect the

quality of the silk he produces.

Fukushima marks the starting point of the pilgrim route up the famous sacred peak of Ontake, "The August Mountain" (10,000 feet), on whose sides and summit the white-clad climbers perform the strange rites of *Kami-oroshi* ("Bringing down the gods"). One member of the band acts as *maeza* or "medium," a kind of "Master of Ceremonies," who by his incantations causes the particular divinity approached to descend and to alight upon the person known as *nakaza*, "seat between." This man throws himself into a sort of cataleptic trance and therein becomes the actual medium of communication between the god and his suppliants. There is much that is strange and interesting on which we cannot now dwell, but it is a curious survival of an ancient cult and illustrates that



IRRIGATION IN THE RICE FIELDS.
A native working a device which raises the water in the rice fields from a lower level to a higher.

bewildering contrast of ancient and modern as we watch the pilgrims, after quitting the sacred mountain and its old world rites, take their seats in the train that is to bear them to their distant homes.

Further north, though now we leave behind us the Nakasendo and its splendours, stands Hodaka, the finest granite peak in Japan (10,150 feet). Here, too, dwells a powerful divinity who is believed to exercise an influence for good or ill upon the fortunes and persons of those who visit its sacred precincts. The fact was brought home to me by a singular experience that befell me when, some years ago, I had the good fortune to make the first ascent of the mountain in the company of a famous old hunter, Kamonji.

On our descent Kamonji in the darkness of the dense forest trod heavily upon a wasp's nest, with painful results to us both. Later on, when drying my torn wet garments at the hut where we spent the night, a Japanese member of our party crept in and quietly asked to be shown where the wasps had stung my "august body." Indicating them as well as I could, I turned and continued my operations at the camp fire. Shortly afterwards, chancing to turn round, I saw Nakazawa, squatting on the floor behind me, executing a series of mesmeric passes and mystic

finger-twistings known as *in-musubi* over the suffering spots. This over, he proceeded to the open door of the hut, and with head bowed reverently to the moonlit form of Hodaka, clapped his hands three times to call the attention of the mountain goddess to his supplications on my behalf. His petitions concluded he quietly turned to me, and in a deep sepulchral voice observed, "This is what we call *majinai* (exorcism). What looked," he added, "and doubtless to you felt like wasps were really the embodied spirits of vengeance, sent by the injured divinity of Hodaka to punish you as an alien trespasser on her sacred precincts. But as I possess the power of exorcism, you will be all right in the morning." That night was sleepless and the next morning was spent in a thirty miles tramp over the pass of Tokugō-tōge. I have often wondered if the *majinai* was efficacious!

It might be mentioned that years later my wife, in my company, made the first ascent of the great peak to be accomplished by a lady mountaineer. But when we subsequently learned that the hunters and fishermen who inhabited the surrounding region, in recognition of this achievement, proposed to elevate her to the distinction of guardian divinity of Hodaka, it was felt prudent to leave the country for home!

The Mining World of Ancient Greece.

(Concluded from page 179).

the river Angista on this side afford healthy and fertile settling places. It is worth remarking in this context that the tobacco from this region is of finer quality and greater value than that from the lower parts of the plain. Nor is it surprising that these foothill villages, which stand between four and six hundred feet above the sea level, are healthier than those at the lower levels.

Six and a half kilometres to the north-east of Kormista at a place near the refugees' settlement of Psathadika, at a point where the Drama-Kormista road crosses a deep stream that joins the Angista near by, is a finely preserved stone bridge which seems to be Roman. Its arches have the appearance of segments but, in fact, are so deeply silted up with marsh mud that their full curve cannot be seen; in all probability they are true arches and not segmental. The bridge is peculiar in having a fine coping, and in its remarkable stepped cutwaters. Its alignment is north and south, thus conflicting with all the modern routes, which run east and west. Built as it was at this important junction of streams, it would seem to have connected up the northern parts of the plain and the mountain fortresses and villages in the Nevrokop area with the Pangaeian foothill

settlements of ancient times. Presumably Kormista, the nearest site that has produced ancient remains, was one of these. Angista was probably another. The recent discovery in the broken ground near the present railway station of a fourth-century tomb, in close proximity to the very striking pointed mound just north of the railway station, is important. On the other hand fragments of pottery apparently of the Iron Age, of types not Macedonian but presumably Thracian, have been found in the earth of this mound. It remains to be seen therefore by the evidence of excavation whether this mound, clearly at one time part of a habitation site, has been used also as a classical burial mound, which it resembles in shape.

The probability that the Angista region was, as I have suggested elsewhere, in Greek times the most important of the mining regions, containing the bulk of the mining settlements, seems increased. Certainly from the point of view of position, communications and proximity to suitable streams for gold-washing, no part of the Pangaeian region would be more likely to hold the main settlements. In the same way to-day the bulk of the refugees in these parts are settling in exactly this same district, which has trebled its population in eight years.

Twenty Thousand Miles through South America.

By Earl Hanson.

Department of Terrestrial Magnetism, Carnegie Institution of Washington.

Mr. Earl Hanson was in charge of an expedition which set out to study variations in the earth's magnetism over a wide area in South America. During eighteen months the author covered over twenty thousand miles, much of which lay through uncleared jungle. The following article has just been received from Washington.

IT is known that there is a magnetic field about the earth which extends far into space. Though discernible everywhere, the cause and origin of the earth's magnetism are problems which remain to be solved. The earth is not, of course, uniformly magnetized, neither is its outer crust, fifty or more miles in extent, uniform in its magnetic behaviour. The study of the magnetic field calls for observations not only on the earth's surface but also in the interior and in the atmosphere. This applies particularly to the higher atmospheric limits and to the earth's enveloping crust, where apparently we must look for explanations to account for the regular and irregular variations in the magnetic field which are constantly occurring.

Many Expeditions.

Obviously such a study cannot be conducted entirely in the sheltered comfort of laboratories and observatories. Observations must be made in every corner of the world, before we can really know how the earth's magnetism is distributed and how it changes, from day to day and from year to year.

Many expeditions have in recent years set out to seek information on magnetic phenomena. One of the many sponsored by the Department of Terrestrial Magnetism of the Carnegie Institution of Washington, was lately completed. This was undertaken by the writer who, during eighteen months of travel, followed a route that took him through the West Indies and down to Venezuela, from Caracas to the oil-fields of Lake Maracaibo, then inland from Caracas to the Apure river and up the Orinoco, first by sail-boat and then by dugout to the heart of the jungles. The journey led us across the heights of land to the Rio Negro, down to Manaos, and then up the Rio Branco to the vicinity of the British Guiana border. The Madeira river was covered, and the Rio Beni ascended into Eastern Bolivia. The Amazon was descended as far as Santarem, near its mouth, and ascended as far as Barranca, near the headwaters over 2,000 miles away. Magnetic observations were made on the Huallaga river in Peru and along the northern trail to the coast in the Andes of Northern Peru.

At the Carnegie Institution's permanent magnetic observatory at Huancayo, in Central Peru, the

instruments were checked and compared with those of the Observatory, and then my instructions led me up the West Coast into Ecuador and Colombia, inland to Bogota, and down the Magdalena river. We carried the latest type of magnetometer, as well as a shelter-tent to protect the delicate instruments during use. We erected the portable observatory at 86 points along the route for the purpose of making local studies.

But it was not always easy to carry out instructions that had been dictated in Washington. At times the jungle had to be cleared to make room for the tent, while tropical bogs in places rendered the work almost impossible. Gnats and mosquitoes pestered us and, in the more civilized centres, inquisitive school-children, cows, or goats denied us all privacy! The glamorous adventure of scientific research often involves not a little monotonous drudgery!

There were places, visited by us, where the sites mentioned in our instructions could not be found. Economic changes and the encroachment of the avid tropical jungles had seen to that, for in the hinterlands of South America thriving communities can be created or completely wiped out by the smallest rise or fall in the price of a single commodity. One of many experiences on the journey will illustrate this. In my heavy dugout, carrying five Indian paddlers, I halted at one of the banks of the Atabapo river, in the heart of Southern Venezuela. The jungle came down to the water's edge and only with difficulty could we penetrate a few yards inland. I scanned a small map and looked about at the trees of what seemed to be virgin forest, and at the vines and lianas that matted the spaces between them.

A Lost Town.

"There was a village here once," I said. "It was called Baltazar." One of the younger Indians answered. "The old Jesuits built many villages, señor. They have now been lost and long forgotten." "But this one existed in 1913. It had a plaza then, and a church, and many people." "I remember it," said one of the older Indians. "It was farther upstream." "It was farther downstream," commented another of the older men. "I carried rubber there in the days when Funes ruled our country." A search

for the site was begun on a ten-mile front, and, eventually, one small broken mirror was found—the only trace of what less than twenty years before had been a thriving town.

The Expedition laboured slowly upstream from Baltazar for several days to the famous Yavita-Pimichin Portage, which was crossed on foot. This Portage—now a jungle train for local Indians and entirely abandoned except by monkeys and parrots—was an important highway for centuries. It is now all but impassable because of the entangling vines that hang across it, the low muddy collections of the season's rains, and the great trees that have fallen over the way. From the deserted settlement of Pimichin the party paddled down the Pimichin river, where, a few days before, advance scouts had drifted on a balsa-wood raft in order to return with a canoe for the traveller's use. Many days later, after having paid a passing visit to the tranquil Indian village of Maroa, the Expedition drew ashore at the town of San Carlos, where there are still a few white men.

The latter were intensely interested in the activities of their visitor. I set up my tent in the plaza, and spent several days in it, working with the instruments. My business was guessed at as being anything from that of a weather prophet to that of a scientific rubber scout. But the view, logically arrived at, that I was looking for the treasure that the Jesuits had hidden about a century and a half before, was the one finally accepted. Before we left, I buried a stone with a cross on it, to mark the place where I had been working. But before we had been gone a week, the stone was dug up to see what might be found underneath it!

And so, first because of the jungle itself, and then through the curiosity of the men who are still able to hold out against the jungle, were lost two more of the thousands of marking stones that in recent years have been planted over all the world in the interests of this branch of science. I was indeed looking for

treasure, but not the kind that the Jesuits left. My task was to make "absolute observations" of magnetic declination, inclination, and intensity, the first being the deviation of the earth's lines of magnetic field from true north, the second being their angle from the horizontal in the vertical plane, and the third being the intensity of the field.

The results obtained are now being studied in Washington with a view to determining the present "secular" or annual variation in these three elements in the regions traversed. For at nearly every point where I made observations I had been preceded, anywhere from five to twenty-three years before, by at least one other scientist who had made similar observations. Thus Power had preceded me to Baltazar on the Atabapo River and Howard and a number of others to Manaos on the Amazon. From the differences between the previous and the present observations, the amounts of change in values are computed.

So exacting is this work that the observer is required wherever humanly possible to reoccupy within the nearest inch the spot used by his predecessors. Markers had been left by all the previous observers, as they have been left in all parts of the world, from the heart of Africa to the Tibetan plateau, but I also carried sketch-maps and

detailed descriptions of stations to help in the recovery of sites despite local superstitions and the ever present treasure-legend. And I prepared markers, descriptions, and maps, for the guidance of my successors. The total mileage of the Expedition, covered by steamer and launch, sail-boat and dugout, railway, airplane, and motor truck, by mule cart, on foot, and in the saddle, amounted to 20,285 miles.

Yet this expedition was only a small part of the whole programme of scientific exploration carried on by the Department of Terrestrial Magnetism. While I was in the field, J. W. Green made magnetic observations along a 20,000-mile route down the east coast and up the west coast of South America. At



A NATIVE USING THE BLOWGUN.

Many of the natives in the regions through which the expedition passed still rely upon the primitive blowgun for hunting.

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present P. G. Ledig is making observations in terrestrial magnetism as well as cosmic rays in the extreme south of the Continent, at Tierra del Fuego and Patagonia. F. T. Davies, a veteran of the Byrd Antarctic Expedition, has been loaned by the Department to take charge of the Canadian expedition that is playing its part in the International Polar Year at Chesterfield Inlet. In China, C. T. Kwei and F. C. Brown are carrying on magnetic research under the auspices of the Department and of the Chinese National Research Council; and in Alaska, at the College-Fairbanks station of the International Polar Year, K. L. Sherman is co-operating with various government scientists.

To the layman the variations of the earth's field of magnetism may seem surprising. He knows that the compass seldom points true north, but believes that it always points to one of two magnetic poles on the surface of the earth. He seldom knows that there are several local poles besides these two, caused by the presence of magnetic materials near the surface. He is wrong in thinking that the compass always points to one of the two of which he knows.

If he followed the needle long enough he would eventually reach a pole, but over a zigzag route. He does not know that the nature of this route changes from year to year and even from hour to hour between morning and night, as the declination at each spot on the surface of the earth undergoes its "secular" variations for causes unknown, and its "diurnal" variations that are probably due to the influence of the sun. He does not realize that on the calmest day a magnetic "storm" may be raging, causing delicate measuring instruments to behave as rowing boats in a gale. But it is through the continued study of these phenomena, and of the variations in inclination and intensity as well as in declination, that scientists are working towards the day when the origin and behaviour of the earth's magnetism may be understood. Only through the systematic acquisition of facts

gathered over the entire accessible surface of the globe can that day be intelligently approached. And only through such journeys as that described can the conditions in the more remote corners of the world be understood.

Fever and malnutrition, tropical skin ailments, and the effects of bad water were our chief difficulty. The heat in the equatorial jungles is not as great as the summer heat in New York, but the cold of the tropical highlands far exceeds the expectations of every unaccustomed visitor. I went through several regions where the comforts of our civilization were entirely lacking and where travel would ordinarily be considered

difficult. But the invariably peaceful attitude of the Indians, and their charming hospitality, made life a pleasure, and more than compensated for the absence of baggage-snatching red-caps.

Most of the dangers we read about are rare in the Amazon jungles. Crocodiles are bad for the health only when a man is foolish enough to get in

their way. Snakes were very scarce. During almost a year along the jungle rivers I saw only two. Much of my territory was the home of the famous South American jaguar, but never once did I meet one. The inhabitants of the Amazon Basin probably afford the greatest example of social regression to be found in the world to-day. Beginning with the decline of the wild Amazon rubber, due to the success of Eastern plantation rubber, and lasting through the present economic crisis of the world, a movement of abandonment has been taking place in the Basin. To-day many of the major rivers have virtually been given back to the Indians. All of my route was once teeming with commercial life, and most of the hardships and difficulties I had to face could be traced directly to the depression.

A highly interesting result of this abandonment may be seen in the health conditions on the various rivers. Along the rivers that are almost completely without any form of commercial transport, the few remaining



IN THE PERUVIAN ANDES.

The pack train passing over a covered bridge. The purpose of the roof is to preserve the planking, since straw is more readily obtainable than hand-hewn planks.

white settlers seem far healthier and happier than where government-subsidized launches and steamers still make possible a small trade in rubber, palm fibers, and Brazil nuts. The reason is that on the former rivers the settlers are forced to plant, hunt, and fish in order to live, while on the latter they send their produce to the markets of the world in exchange for beans and rice and dried meat. Malnutrition, due to lack of fresh foods, according to my observations and confirmed by the report of the Hamilton Rice expedition of 1924-25, is one of the greatest single detriments to health in the world's most fertile area.

Another significant effect is found in the changing life of the local Indians. In many instances, centuries ago, they lost their native culture, and have grown to depend on the white man, his cotton cloth, his matches, his salt, gunpowder, fish-hooks, knives, and above all his soap that is so essential to the scrupulously clean inhabitants of the jungle. Now that these articles are increasingly hard to obtain, the Indians are again forced to become self-sufficient and to evolve an entirely new native culture—a compromise between the old tribal culture and the Indians' life under the white man.

The Aborigines along the central Orinoco and the Rio Negro "see the writing on the wall," and look forward with some fear to abandonment of the river commerce. But they will survive even a complete and permanent desertion. Two reasons may be given for this conviction. One is the fact that they have never given up the blowgun and poisoned dart, and the other that, unlike the white settlers, they have never stopped cultivating their jungle clearings. Still able to hunt and carry on agriculture, they will not suffer from the withdrawal of commerce, and the new culture that they may be forced to evolve should be of intense interest to ethnologists.

Across the Andes.

In Peru, the Expedition left the rivers and took to pack mules for the trip across the Andes. On the northern trail, now only a secondary highway and completely eclipsed in importance by the famous Piches trail from Lima to Iquitos, it followed for weeks the ancient paved Inca highway that stretched for hundreds of miles across the Andes, from the Amazon jungles to the Pacific coast. Fortified and well drained, tapping the old Inca gold-mines at Chachapoyas, this great piece of primitive engineering served as a trail for the Spanish *conquistadores* who founded the garden city of Moyobamba centuries ago.

Since that time, however, the railway and the motor

car have made the pack mule obsolete, and the great fertile, and enormously mineralized area of Northern Peru has fallen into decay. The picturesque cities of Chachapoyas and Moyobamba lie cut off from the rest of the world, with no outlet for their produce, no inlet for imports, and practically no money for commerce. They can be reached to-day only after weeks of arduous travel.

Tragic Reminders.

Repairs have been neglected on the splendid roads built by the pre-Spanish Indians. Where the early white settlers had paved highways and hanging bridges for their journeys, their modern successors are often forced to labour for days through mud and along treacherous, slippery mountain-sides, and to camp for long periods till rain-swollen rivers allow the travellers to cross. On one day's journey we passed eleven crosses, erected by the roadside to mark the spots where men had fallen into valleys or died of cold or starvation.

But I was left in unbounded admiration for the muleteers who served me. These men travel through the region, week in and week out, year after year, summer and winter, rainy season and dry, transporting the mails and the commercial shipments. Barefoot they walk behind their mules, the soles of their feet protected only by sandals that are generally made of old motor tyres. Always inadequately clothed, their thin shirts and ponchos often sodden with rain or frozen stiff in the cold of the higher passes, they are always cheerful, and always patient and gentle with their beasts.

It is possible that in the relations of the Andean Indian to his llamas and his mules may be found one explanation of the fact that modern man has not given a single domestic animal to the world. It is possible that primitive man's success in domesticating animals has been due to the primitive's ability to make friends with the beasts about him—an ability that is lost as man becomes more civilized.

PROFESSOR Conway asks us to make two corrections in his article on "The Portrait of Vergil" in the May number. On p. 142, l. 22, read "sixth visible sign" (instead of "fifth"); and on p. 146, note 3, read "graffiti" (instead of "graffite").

He asks us also to state that his own confession of ignorance of any earlier reproduction (p. 141) was literally true. Had he known of the picture in Dr. Hill's book, he would have mentioned it, as he did the sketch in Dr. Mackail's.

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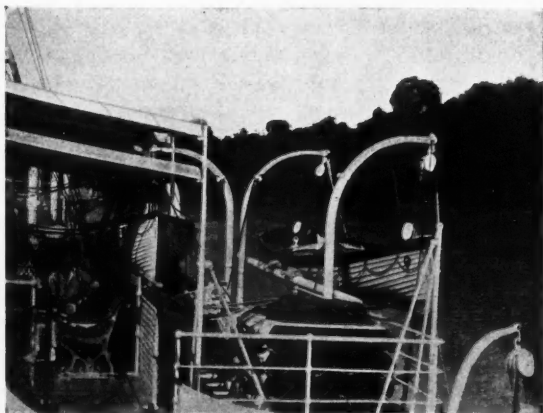
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THE AMAZON.

These photographs, taken while on a tour a thousand miles up the Amazon, show: Top—a native dugout (left), and fishing with bow and arrow (right). Centre—a rubber gatherer's shack. Below—In the narrows (left), and riverside dwellings (right). They are reproduced by courtesy of the Booth Steamship Company.



Impressions of New Zealand.

By R. S. Conway, F.B.A.

The following brief impressions of a visit to New Zealand contain some suggestive reflections on many aspects of life in the Dominion. While discussing such pressing problems as the control of the rivers, Professor Conway has also many amusing recollections which he treats in lighter vein.

No experience is quite like the first sight of land after a long voyage, especially if the land is that which one is seeking. There is some breath of the Columbus spirit somewhere in all of us—"the longing for the further shore" which Vergil attributes even to our ghosts. Certainly few headlands could be more impressive than the tall pyramid of Cape Palliser, rising grey out of the dawn of a rainy morning, which was my first sight of New Zealand. All the more welcome, too, it was, because the Tasman Sea had lived up to its reputation, rolling and shaking and flooding our good liner with a fierce storm for twenty hours. Five days before, on the other side of Pitcairn Island, we had been enjoying sub-tropical sunshine; but now it was clear that the spring of the southern hemisphere had hardly begun; warm clothes, stout boots and an umbrella were all indicated as part of one's equipment for landing.

But the feeling that one was somewhere off the Scottish coast was modified by the quite Italian beauty of Wellington Harbour. Sailing up between steep green mountains, through a course narrowed at one point by a dangerous reef, which, to the mild disgust of sea captains and the amazement of their passengers, had still no lighthouse, we found ourselves in a deep basin of hills—their sides dotted with hundreds of white houses, each with a garden round it. Hardly two months after mid-winter the gardens were rich in flower, and one's thoughts went back to the Italian Riviera and the silvery hills of Alassio with their patchwork of creamy villas and green vines.

A Striking Feature.

But the houses of Wellington, except the large buildings on the lip of land reclaimed from the bay, are built of wood; and this gives great freedom of design to the architects and consequently a pleasant variety in the prospect. That is one of the most striking features in the whole of Australasia. Save in a few of the suburbs of Sydney, I noticed none of the dull rows of unseparated houses, all alike, which are the eyesores—and often the misery—of our English towns. The young communities have room to spare, and for the most part even the poorest house stands detached in a garden.

A thoroughly Scotch welcome awaited the new

arrivals; as we filed past the passport officer, each of us was courteously greeted by a single representative of many religious bodies, who offered for one's choice half a dozen envelopes labelled with the names of different denominations, promising a welcome and religious hospitality.

The Wellington Wind!

Unlike those of Australia, the formalities of the Customs were slight, and my kind host guided me about the town—first to send cablegrams at the busy and handsome Post Office, twice as large as the Post Office at Plymouth, though Plymouth is many times larger than Wellington; and then to secure my passage to the Southern Island the same night; for my real visit to Wellington was paid on my journey north later on. One soon became aware of the chief drawback to happiness in Wellington, namely, the wind, or rather the winds. They say you can always tell a Wellington man at the corner of any street, for he always claps his hand to his hat because of the gusts which he expects there to carry it off; and the wits declare that at Nelson, the other side of Cook's Strait, no one ever buys a new hat, but just waits on the shore to pick up one that has blown from the North Island.

Another drawback in the eyes of an English (or even a Scotch) visitor, characteristic of the whole of Australasia, was disclosed when I came to stay later at an excellent hotel, which charged me twenty-five shillings a day for quarters which in London might have cost about fifteen. On this first visit I was entertained by my colleague who, among other hospitable provision, gave me to drink some Australian port; good sound wine, indeed so good that I was convinced that I had drunk it more than once before, in Great Britain, under various other names.

By eight o'clock in the evening I was at sea again on what they modestly call a ferry-boat, a quick and clean steamer of some 3,000 tons, the *Maori*, crowded with footballers going to play college or school matches. No one in New Zealand thinks anything of this night trip, though the sea is generally rough. We landed at Lyttleton, in an inlet crowned with the beautiful rocky tors of what some Anglo-Indian has named the Kashmir Hills; and a short journey in a very

long train took one north through the ridge by a tunnel to the smiling town of Christchurch. This stands on the plain stretching from the north side of the Kashmir Hills to the splendid line of the Southern Alps, which make the backbone of the Southern Island and which bend a little eastward at their north end. Of these I had a splendid view one quiet Sunday when friends took me up Mount Pleasant—the summit nearest to Christchurch, some 1,500 feet high. Stretched out before us lay the vast blue Pacific, with an arm curling round the grey headland into Lyttleton harbour; to the north and west a white wall of snow summits, though the highest of them, Mt. Cook, was, unkindly, behind a cloud; below us the great plain, mostly green with fields of young maize, or orchards just coming into leaf, but broken by stretches of shingle, where that wild young river the Waimakariri has burst its bounds and made a stony waste.

Here and there in the plain were bridges with nothing but barren ground beneath them, and long stone embankments, apparently built for fun. Both, I learnt, had been constructed at great cost, to cross the river or direct its flow, some years ago; but since then it had entirely changed its course and left all this expensive masonry high and dry! I was assured by a careful student of the phenomena that there was grave probability that the whole town of Christchurch, which lies very little above sea level, would be inundated by the river before—if I remember rightly—eight years were over; and nearly five of those years are now gone. The difficulty seems to be that none of the local authorities concerned are large enough to command the requisite funds, which must be provided by the Government of the Dominion. I should be very glad if this reminiscence could attract an article on the subject, written with real knowledge of the present situation and prospects. For the problem of river control is of great interest in many parts of the world.

Kashmir Prospect.

With these rather sobering reflections we bade good-bye to Mount Pleasant, which well deserves its name. The actual inlets of the sea and the hills of the foreshore are no doubt less beautiful than those at Dunedin, and less grand than the mountains that hem in the incomparable harbour of Hobart in Tasmania; but the Kashmir prospect has a romantic look not unlike that of Bray and Wicklow, south of Kingstown, as one approaches the Irish coast, and New Zealanders are very proud of it.

Christchurch itself is for all the world like Cambridge,

with the same slow-moving river between green banks, and trees which already look old; the same quiet and beautiful College architecture; the same gardens full of blossom, screened from the road by well-clipped hedges, and the same stone conduits of clean water running merrily down the sides of the street. But I must add, for truth's sake, it is like Cambridge without the slums of Barnwell. Canterbury College, Christchurch, competes with what used to be (and may be again) the University of Otago at Dunedin, for the intellectual primacy of the Dominion.

Scotch Fire—and Anglican Dignity.

Thanks to their respective founders, at Christchurch one's first impression is of Anglican dignity and old-world grace; at Dunedin, of Scotch fire and a thrifty but earnest enthusiasm for knowledge. The Dominion does right to be proud of the work of both. University College, Wellington, does its best to overtake Dunedin and enjoys strong support. Auckland I did not see; it was whispered to me, I do not know with how much truth, that it was the usual landing-place of American Professors, who came in such numbers that a Professor from anywhere was rather a drug in the market. But everywhere, outside Dunedin, I was assured that if I had seen Auckland, I should have thought it the most beautiful town in the Dominion. If it is finer than Dunedin, it must be very fine indeed.

A story told me by "the grand old man of New Zealand," who honoured me by an invitation to his house, the late Sir Robert Stout, K.C.M.G., seemed to me characteristic of the Dominion. Sir Robert was then living in retirement, at the age of eighty-four; in his time he had been successively Attorney-General, Minister of Education, Premier, and Chief Justice of New Zealand, and High Commissioner for New Zealand in London. He told me (over mid-morning tea, a regular custom in Australasia), that he was born in Shetland, and as a boy he was one of a class of five who were picked out from the elementary school by the minister to be taught Latin (in those days every parish minister in Scotland who undertook to teach Latin received a modest increment to his stipend). First he mentioned notable distinctions attained by all the other four; and then he related how at the age of twenty-three in 1867 he was second master in a primary school at Dunedin. The boys from the farms mostly came a long way to get to school, so the regular time of beginning was 9.30. He had a hundred boys in his class and no Latin was taught in the school. But the recollection of his own school days inspired him to try an experiment. He said to his class: "Boys, you will be better men if you

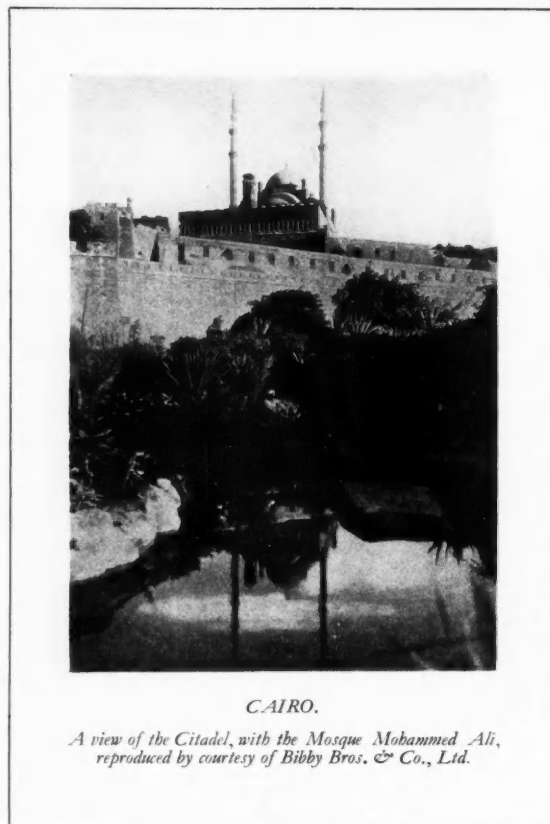
know some Latin; I will teach you, if you like, every morning at 8.15, but under one condition— whoever is not here at that time will be shut out." No one who had listened to that fine old Scotchman, the champion of progress and freedom for half a century, would find any difficulty in believing the end of the story; the boys all turned up throughout the year.

Control of the Rivers.

I have little space left to say more of the fierce rivers, continually changing their short courses, which, as we have seen, will have to be controlled before New Zealand can be even safe, let alone as productive as it might be; or to tell of the evening I spent in the House of Representatives, where one marked the vigour and skill of the then Premier, leader of the National Party—and the patient efforts of the not less skilful leader of the Labour Party, to keep his fluent followers within the bounds of fact; or of the curious effect of the Ten-minutes' Rule, under which it is easy to make what sounds like an effective speech, omitting, nevertheless, to answer the arguments of the other side; one expresses, of course, one's regret for having no time to do so, when the bell has rung. The debate (on a point of procedure) was conducted with good humour, though with great freedom of epithets on both sides, for two hours, and at the end I felt like the Pope's audience when the Jackdaw of Rheims had stolen his ring:

"Never was heard such a terrible curse,
But what gave rise
To no little surprise,
Nobody seemed one penny the worse."

My last word must be one of cordial gratitude for what seemed to me, after a good deal of travelling, spread over forty years and many countries, the almost unique friendliness of New Zealand people to a stranger. In one large Post Office a clerk came out from behind his counter to guide me to a telephone box in the street which I could use for threepence less than the box in the office. One Saturday evening, returning by rail from Dunedin, I reached Christchurch after dark; the platform, which is three-quarters of a mile long (another resemblance to Cambridge) was crowded with hundreds of people—some leaving to take the steamer at Lyttelton; more to meet friends from the train, which was the only one in the day from the south of the Island; and a great many, I am convinced, because the arrival of the train was the great event of Saturday. In that season it always brings home to Christchurch two or three popular



CAIRO.

A view of the Citadel, with the Mosque Mohammed Ali, reproduced by courtesy of Bibby Bros. & Co., Ltd.

football teams. I was receiving my bags handed to me by a kind neighbour in the train through the window of the saloon-car. On my arm was hanging a rather choice walking-stick with a hooked handle, which I had bought at Pitcairn Island. This, as luck would have it, was jerked off and fell between the train and the platform; had it fallen across the rails I knew its fate was sealed, and it was too dark to see down into the three inches of space that separated the train and the platform. While I stood wondering what to do, a complete stranger asked me what my trouble was. On learning it, he spoke to another, and both of them took off their great-coats and proceeded to feel about in the dark and dirty gap with the crook of an umbrella for some five minutes, until they had succeeded in fishing up my stick. Of course, I thanked them; but they made nothing of it; just lifted their hats and went off. No doubt one could have obtained the same sort of help in England, at all events on a less crowded platform, if one had asked for it; but in New Zealand, as I said to myself, kindness seems to grow out of the pavement.

Book Reviews.

Northward Ho! for Birds. By RALPH CHISLETT. (Country Life. 15s.).

Mr. Chislett, in his introduction to this book, says he makes no claim to add something material to what is already known of ornithology; but he admits that he has been attracted by the more unusual types of birds, and some of his subjects have been rarely or never photographed before. He is primarily a bird photographer, but is also an observer who knows the pleasures of watching and recording the behaviour of birds at close quarters.

"Usually," he tells us, "he has been drawn northwards, and 'Northward Ho,' in the spirit of discovery, is the keynote of this book." He loves the open moorland, and suggests—that has often occurred to us—that inherited memory of a primitive ancestry may explain its fascination. First he takes us to the streams and moors of the Peak of Derbyshire. Here, among others, was a pair of dippers, the male of which, in his enthusiasm to keep clean the nest and its surroundings, removed into the stream not only the droppings but balls of tissue paper which the photographer placed beneath the nest to see what the bird would do with them. Ring ousels nest here too, and merlins. Kills of the latter included three young cuckoos, in our experience an unusual prey.

Next we are led to Scotland; Galloway with its lochs and gulls and inland breeding cormorants, whose countship, like that of the shag, includes a deliberate display of the orange interior of the mouth; the Highlands, with the crested tit, so stupidly persecuted by collectors, and the greenshank, so extremely suspicious of the hide and the photographer, but finally tamed by tact and patience; Ross and Sutherland, in the north-west, where the author watched and photographed both black and red-throated divers, and the rare Slavonian grebe, so beautifully adorned with golden tufts, and an eye whose crimson iris is ringed with white. Journeying still northwards, the author reached the Shetlands and their fulmars, arctic and great skuas, and dunlin. Here he easily made the acquaintance of the delightfully tame Shetland wren, and also of the whimbrel, nesting in what is the southernmost limit of its breeding range, and here he obtained a charming photograph of four red-necked phalaropes swimming together.

But perhaps the most interesting chapters are those recounting Mr. Chislett's adventures still further afield. Öland is an island in the Baltic, near the south of Sweden. Linnaeus worked there when first naming species. Here blackbirds, thrushes and robins were absent from gardens, though they bred in small numbers in adjacent woods. Thrush nightingales were common, their song more powerful but less varied in range than our English nightingale's. Barred and icterine warblers were nesting, both rare migrants in the British Isles. A particularly treacherous marsh proved to be the breeding ground of black tailed godwits, ruffs and black terns; the last named were most difficult to photograph, for they nested in the wettest part of the swamp and the author's seat sank so deep that its top was only a few inches above water. But in spite of this discomfort, he noted, as his photographs clearly show, the entirely black head and breast of the male contrasting with the paler shades of the female.

One of the most interesting episodes in the book is the account of the search for and eventual discovery of two nests of turnstones (a species supposed but never proved to have bred in the British Islands) on an islet off Öland. One nest was in the open,

and the other concealed by a clump of chervil. The portraits of these birds are particularly clear and attractive.

Lapland appears to be the furthest north so far attained by Mr. Chislett. In June snow storms and mosquitoes hampered his activities, but besides fieldfares and redwings, he found and photographed nesting blue-throats. His account of this bird's imitative powers is most interesting; compared with it the starling must be but a poor mimic. His photographic coups in this district included the wood-sandpiper, the jack snipe, the broad-billed sandpiper, the dotterel and the long-tailed skua. The dotterel breeds in the British Isles—so far as clutch hunters let it—and the wood-sandpiper has nested there once or twice, but the others are unknown to us as breeding species.

The book concludes with a chapter containing hints to photographers—and others. If the author's instructions are followed there will be fewer "unfortunate accidents." We heartily recommend this book to all bird-lovers.

Tell Halaf. A New Culture in Oldest Mesopotamia. By MAX VON OPPENHEIM. Translated by GERALD WHEELER. (Putnam. 21s.).

When Baron von Oppenheim, a German diplomatist at Cairo, was traversing Northern Mesopotamia in 1899 to determine the best route for the projected Bagdad railway, he heard by chance that stone statues had been uncovered on a hill near Ras el Ain. Moslem peasants, digging a grave, had come upon statues of animals with human heads. They hastily filled up the hole and went elsewhere for the burial, but, as drought and cholera visited them soon afterwards, they inferred that evil spirits had been let loose by their digging and that it was best to say nothing about their discovery. However, the Baron, having the protection of the local chieftain, persuaded the peasants to show him the site and within three days he had found the remains of a temple-place and some great statues of basalt. Years later, before and after the war, he excavated the site systematically, and this important book gives a lucid and scholarly account of the results.

Tell Halaf, a hill on the south side of the railway and a few miles south-west of Ras el Ain, is in the middle of the desert of Northern Mesopotamia. In prehistoric times it was surmounted by a large fortified city with a citadel and a great temple-palace, elaborately decorated on the exterior with sculptured reliefs and with megalithic statues supporting the entrance. The lowest stratum of the diggings yielded great quantities of archaic painted pottery with flint and obsidian tools. The statues and reliefs are, in the author's view, of the same age. Dr. Herzfeld, who speaks with authority and devotes a long technical appendix to the matter, would date the oldest of the statues earlier than 3,000 B.C. He is convinced that they are not Sumerian but the product of another race, which influenced the somewhat later sculptures of the Hittite fortresses at Senjirli and Carchemish. This Tell Halaf work, which the author illustrates very fully, is certainly most impressive. The reliefs, especially the hunting scenes, have an astonishing vigour and sense of style, archaic though they be, and the "great throned goddess" and the singular figure of a scorpion-bird-man, as delicate in detail as the goddess is bold and coarse, are monuments of primitive art.

No inscriptions of this early period have yet been found. The printed pottery corresponds to that found at oldest Susa and by Mr. Woolley in the pre-Sumerian strata at Ur. The people who made it were, in the author's view, of the aboriginal

"Hibier Asiatic" or Subaraic race, living in the region which the Babylonians knew as Subartu. The Subaraic culture, spread across the Middle East, is, for Baron von Oppenheim, as important and as ancient as the old Babylonian and old Egyptian; at any rate, it is distinctive and will repay further study. The author conjectures that the old Tell Halaf city was destroyed by the Indo-European Hittites somewhere about 2,000 B.C. A thousand years later, an Aramaic potentate, Kapara, son of Hadianu, reigned at Tell Halaf and restored the temple. His cuneiform inscriptions occur on the statues. The Assyrians, who conquered the Khabur valley about the year 800 B.C., called the city on Tell Halaf Gozana; the author identifies it with the Gozan of the Old Testament, one of the places to which the Israelites were deported after the fall of Samaria. Traces of later Hellenistic and Roman occupation occur, and the town doubtless existed as a station on the trade route until the Mongols in the thirteenth century of our era converted Northern Mesopotamia into the desert which it is to-day. Baron von Oppenheim's discovery of its early civilization suggests that the country may be developed afresh, now that the railway has reached Ras el Ain and the French Mandate is in force. In any case his book is a fresh and valuable contribution to the early history of the Middle East, and it is good to know that he has made provision for further work on this interesting site.

Mexico Before Cortez. By J. ERIC THOMPSON. (Scribners. 10s. 6d.).

This short but instructive account of daily life, religion and ritual as it existed in Mexico before the Spanish Conquest will be welcomed as a complementary volume to Captain T. A. Joyce's scholarly book, "Mexican Archaeology," which is no longer in print. Captain Joyce did not deal in detail with ethnological customs, and Mr. Thompson's observations on this aspect of his subject are therefore of value. Until a few years ago it was generally thought that the first immigrants had reached the shores of America some ten or fifteen thousand years ago. The first inhabitants were supposed to have crossed into Alaska from Asia by way of the Behring Straits during and after the glacial periods. As Mr. Thompson states, important discoveries during the past four or five years may lead to an upward revision of this estimate. In a cave in southern Nevada associations of man with supposedly Tertiary fauna have been discovered. The upper deposits revealed remains of modern Indians, while below were found typical remains of the Pueblo peoples of a thousand years ago and traces of the Basketmakers, who preceded them. Below these were thick deposits carrying no human remains. Under these again were two thick bands of sloth manure, and below this the remains of two camp fires in one of which sloth manure had been used as fuel. Other chambers of the cave revealed bones of the sloth, an extinct species, as well as remains of extinct horses and the American camel, a llama-like animal, but not directly associated with human remains. But spear-thrower shafts painted green and red were found far below the sloth-manure levels. With the remains of this extinct fauna, however, were found the bones of mountain sheep and other animals still in existence. Evidence from other localities seems to confirm these discoveries. As Mr. Thompson says, the evidence indicates either that man has lived longer in the New World than was previously supposed, on that various animals, such as the giant sloths, American camel and mastodon, which were believed to have been extinct in Tertiary times, actually

lingered on in favourable places until quite recent times. The author suggests a compromise between these two possibilities until further evidence is available. "On this assumption the arrival of man in the New World should be pushed back to, say, twenty thousand years ago."

Mr. Thompson deals attractively with the arts and crafts of the early Mexicans, their social organization, their religion, trade and war. An instructive chapter describes the feasts, and another the priesthood, sports and writings. Finally, the author has much of interest to say about the temples and tombs. There are many fine illustrations.

Searching the Hebrides with a Camera. By ALASDAIR ALPIN MACGREGOR. (Harrap. 7s. 6d.).

Mr. Macgregor's engaging account of a summer tour in the Hebrides will certainly inspire many readers with a wish to follow in his track. He landed in South Uist, passed on to North Uist and Benbecula, and then traversed the Long Island of Harris and Lewis. It would not be an easy journey for those who have not friends in the islands, who know no Gaelic and who do not care for crossing possibly rough channels in somewhat primitive ferry-boats; and lodging is not always procurable without notice. But the unconventional traveller who delights in sea and sky and open moorland is well rewarded for the toil of a Hebridean tour, and, if he has a yacht, he can in fine weather see all these things in comfort. Mr. Macgregor's photographs, which are numerous and excellent, speak for themselves. The Hebridean scene is fascinating and unique. And the people, relatively few in number except in Lewis, have retained much of their old independence and simplicity, though the young people tend to migrate more and more to Glasgow for lack of employment on the infertile soil or in fishing. Mr. Macgregor describes his journeyings, notes the occasional old churches and the few turf huts that are still inhabited, and introduces anecdotes of the ancient clan or family feuds that kept the population down. He has, of course, a good deal to say about the late Lord Leverhulme's heroic but vain effort to establish a modern fishing industry, first in Lewis and then in Harris, which was spoiled in Lewis by the inhabitants' determination to look a gift-horse in the mouth, thus missing the greatest of all the great opportunities that various philanthropic proprietors have offered to Lewis since the seventeenth century. Mr. Macgregor should not, however, impute personal blame to the officials of the Scottish Board of Agriculture for breaking up Lewis farms into small holdings; the officials are simply carrying out the policy laid down by Parliament; and it is very improper to suggest that they are acting in their own interest. Apart from this, the author certainly gives a faithful impression of the Hebridean life and scenery, in summer time, though for more exact accounts of the islands one must go elsewhere, and his photographs, one must repeat, are exceptionally good.

Among Congo Pigmies. By PAUL SCHEBESTA. Translated by GERALD GRIFFIN. (Hutchinson. 18s.).

Dr. Schebesta has had exceptional opportunities for studying the pigmies of the Ituri Forest of the Congo. Other travellers have described them but only on a superficial view. Between January, 1929, and September, 1930, the author visited all the groups to which he could obtain access and on several occasions lived among them for a considerable period. He was

thus able to give a vivid idea of the peoples and their life.

The author's account is simple and direct, and the book is a valuable addition to the literature of the subject. It is a pity that the book is so small, and that it does not contain more illustrations. The author's account is a valuable addition to the literature of the subject. It is a pity that the book is so small, and that it does not contain more illustrations.

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thus able to observe their customs in minute detail. As a result of this close observation he has been able to give his readers a vivid idea of every-day life among one of the most backward peoples in existence to-day.

The pigmies of the Congo are still living as nomad hunters and they have not yet attained to the making of fire. They do not, however, represent the nomad hunter in all his primitive simplicity; for owing to the fact that the Congo forest does not provide enough in vegetable products to meet their needs on their present scale of living, the pigmies have to rely on the land-owning peoples for their supply of bananas, sugar-cane and other foods, as well as for the iron required to make spear- and arrow-heads. In return for these supplies, the pigmy provides his overlord with forest produce and game and acts as his elephant hunter. This remarkable association of the full-statured agriculturist and the forest-dwelling pigmy is apparently of long standing. So at least the author would interpret the fact that the pigmies speak dialects of an extremely archaic character, which are not the languages of the tribes with whom they are now associated.

This is a worthy pendant to Dr. Schebesta's work on another little jungle people, the Semang of the Malay Peninsula.

The Roving Angler. By HERBERT PALMER. With Woodcuts by ROBERT GIBBINGS. (Dent. 6s.).

Though the author is mainly concerned with fishing, his book will be read by a wider public, and should have a special appeal for travellers. It is dedicated "to all true fishers and good hikers." Mr. Palmer writes with a love and understanding of the countryside, and views with regret the changes which have come over the landscape since his early angling days in the 'nineties, when villages like Grassington on the river Wharfe were secluded and unspoiled. The cotton mill between Linton and Grassington was not yet working and no lime works poured out clouds of rolling smoke. There were no tarred roads, no ugly buildings and no distracting noises along the white limestone roads. Like other beauty spots, the motor-car has invaded the neighbourhood, and the banks of the Wharfe are now noisy with trippers, while many building deformities have robbed some of its corners of their old pastoral glory. "Against Grassington Bridge is a row of the ugliest cottages that were ever put up by the hand of man." It is a great pity that sterner measures are not taken against the erection in beautiful places of hideous and unsuitable buildings. It should be an easy matter to ensure that new buildings should tone with the surroundings.

The author's speciality is brown-trout fishing, both with bait and artificial fly, but he writes from experience of fishing in general—on Exmoor, in a Prussian haff, in Cornwall, on Scottish waters, and in Ireland. There is much information of technical interest to the angler. Woodcuts are always in keeping with a book of this kind, and Mr. Gibbings' illustrations are of a high standard.

Life in Lesu. By HORTENSE POWDERMAKER. (Williams & Norgate. 15s.).

Lesu is a village on the east coast of New Ireland, which is part of the Bismark Archipelago and is in the region of the South Seas known ethnologically as Melanesia. Although the island is only two hundred miles in length, with an average width of twenty miles, there are nine linguistic districts, and each dialect is mutually unintelligible. Dr. Powdermaker, a pupil of Pro-

fessor Malinowski, spent nearly a year in Lesu, and during this time was the only white woman in New Ireland. Her book is a careful and detailed account of the daily life in this part of the island. Education, marriage, work and trade have been carefully studied, and are described with a wealth of detail. The chapters devoted to the native myths and taboos, religion and magic, are most interesting. To learn the language, which is a hitherto unrecorded Melanesian dialect with apparently Papuan elements, was a difficult task. The author's interpreter knew only Pidgin English. A certain amount of work was done in New Ireland some years ago, mainly by German investigators, but their enquiries were chiefly confined to the southern and central part of the island. In studying the district round Lesu, Dr. Powdermaker has therefore broken fresh ground, and her book is a valuable introduction to these interesting people.

Field Book of the Shore Fishes of Bermuda. By WILLIAM BEEBE and JOHN TEE-VAN. (Putnam. 16s.).

Much interest has been taken in Dr. Beebe's deep-sea expeditions to Bermuda, under the auspices of the New York Zoological Society, but little has been published in this country about his work on the fishes of the region. We therefore welcome the publication of this preliminary handbook, although it is strictly confined to a study of the shore fishes. The list, however, numbers ninety-two families and 335 species, of which seven are new. When the time comes for a more detailed work on the fishes of Bermuda, this careful volume will be found to have cleared the ground in a remarkably thorough way as far as the shore species are concerned. In the meantime, it makes available a valuable means of identification for tourists and fishermen. Keys to the groups and to the species are included, and the treatment of individual species, though necessarily brief, is more than adequate for the purpose. Under each species the Bermuda and technical names are given, with the field character, colour, size, diagnosis and distribution.

It is well known that fish migrate in the same way as birds. The authors mention the mackerel as a good example of the migrant in Bermuda. In October and November fishermen may be seen, perched on the high overhanging cliffs, watching for the arrival of great schools of these fish in the same way as bird-watchers await the coming of the migrants. The most marked migration of fish about Bermuda is a general outward shift of many species into deep water at the approach of cold weather. Thirty feet down in the Bathysphere, Dr. Beebe once saw a migration of thousands of giant blue parrotfish. There is also a day and night migration in Bermuda, illustrated by the puppy sharks, which pour in large numbers into Castle Harbour every evening and return to deeper water at dawn.

Great Men of Science. By PHILIPP LENARD. (Bell. 12s. 6d.).

This able series of biographical portraits provides a brief but adequate history of the development of science, from Pythagoras to the opening years of the twentieth century. In the space of 400 pages the list had clearly to be restricted, and Professor Lenard has shown discrimination in including from twenty-four centuries of science only those figures who have brought forward something entirely new. The biographies have been based on original sources. We can confirm the closing paragraph of Professor E. N. da C. Andrade's introduction: "A strong individuality like that of the writer of this book is bound to show strongly individual judgments, and yet I venture to assert that no one will be found to deny that every name appearing

in the book represents a major contribution to science. If the character of the writer pervade the book, it is rather by the circumstance that his admiration for uprightness of character and devotion to high ideals, his love of scientific truth appear on every page, than by any personal prejudices." The author is known to us as the brilliant pioneer of phosphorescence, cathode rays and ionization potential, and we welcome the appearance of this volume, published just before his seventieth birthday. Some of the scientists whose biographies appear are: Euclid, Archimedes, Leonardo da Vinci, Kepler, Boyle, Newton, Rumford, Faraday, Darwin, Maxwell and Hertz. There are many portraits.

Hunter's Moon. By LEONARD HANDLEY. (Macmillan. 15s.).

After twenty-two years' experience in the jungles of India, Burma, the Malay States and Siam, Major Handley may claim to write with authority. He sets down his adventures with an attractive modesty and restraint, writing rather of the mystery and romance of the jungle than of the killing of animals. As a big-game book, it is a welcome departure from the all too common account of indiscriminate slaughter, for the author shares our distaste for this class of book, "with its incredibly dismal unfolding of the correct paraphernalia and methods necessary to outwit the denizens of the jungle." Major Handley has captured the spirit of the jungle and in this simply told narrative he infects the reader with his own devotion to "the valleys of laughter, the hills that the hunters love." Year after year he was lured back to the green recesses of the Central Province forests. He saw them in every season; during the vivid dry months preceding the monsoon, "when the grass burned the soles of one's boots and all nature panted for the rain"; during the early monsoon months, when the young grass was bursting beneath the early showers, and the nalas and river beds were parched, awaiting the flood; and in winter and early spring—"a Bernese Oberland climate," the jungles sparkling as a vin Mousseux, the mhowa shaking her scented petals, and the frosty starlit nights." The book is well illustrated, and in these days of economy, a handsome coloured frontispiece is a luxurious sight.

The Voyage of the "Parma." By A. J. VILLIERS. (Bles. 25s.).

Mr. Villiers tells the story of the four-masted barque "Parma" in which he sailed on its voyage in the "grain race" with the last of the sailing ships from Australia to the English Channel. It is an appropriate companion volume to the authors two earlier books "Falmouth for Orders" and "By Way of Cape Horn." The "Parma" carried 52,000 tons of wheat, was manned by a crew of boys—and won the race, covering 15,000 miles in 104 days. Mr. Villiers presents a worthy record of a memorable event in the annals of the sea. The story is told with an able-bodied seaman's lack of pretention and with a sailor's love for the sea and pride in his craft. There is a vivid pen-portrait of the captain of the vessel—a typical Cape Horn shipmaster, absorbed in ships and the sea: "He remembers things about ships he has seen in the ports ashore when he remembers nothing about the ports. A sailor, he says, can always learn about ships; to know any ship it is necessary to sail four years in her and to study her closely during that time. To imagine one knows everything, that the sea has no more to teach and a sailor no more to learn, is a certain prelude to

disaster." There are many striking photographs, and the production of the book is dignified and graceful and in keeping with its subject—a travel book of the very best kind.

Psychology and Social Progress. By RAYMOND B. CATTELL. (Daniel. 15s.).

The sub-title of this book is, "Mankind and Destiny from the Standpoint of a Scientist." Its scope is thus immense. There are ten chapters in just over four hundred closely printed pages and each has many sub-sections. Some of the titles are: "The quest for certainty in social ideas," "nation and race: their significance for human progress," "ultimate morality and natural science," "false beacons in social progress," "the control of destiny," "a tentative plan for constructive racial control." In a concluding section, Dr. Cattell presents a "summary of essential aim in a society for constructive racial control."

A Guide to the Languages of Europe. By A. LYALL. (Sidgwick & Jackson. 5s.).

Most travellers are familiar with the nuisance of being obliged to carry a number of phrase-books, since few are accomplished conversationalists in more than half-a-dozen European tongues. Mr. Lyall has met the need for a pocket universal phrase-book which should prove invaluable to the traveller in Europe. The book is divided into five sections, giving side by side in each section most of the every-day phrases required in five separate languages. French, Italian, Spanish, Portuguese and Roumanian are, for instance, grouped in the first section. The last section even includes Esperanto. The author is to be congratulated on the concise and helpful way in which the book is arranged.

An Arctic Safari. By RICHARD L. SUTTON. (Kimpton. 12s. 6d.).

The expedition which Dr. Sutton describes was undertaken for educational purposes as well as for sport. He had often been told of the beauty and grandeur of the Far North, and his admiration of Norwegian seamen decided him to sail from a North Scandinavian port. The motor-ship *Isbjorn* was obtained—a sealer and ice boat which proved ideal for the purpose. The expedition comprised Dr. Sutton's wife, son and daughter, seventeen sailors and a cook. They left Tromso in May, 1932, and the *Isbjorn* was the first boat to reach shooting territory that spring. The book is largely devoted to sport—the hunting of Polar bears, walruses, whales and seals. There are exciting stories of snowstorms and icebergs. It is a typical "big game" book with many noteworthy illustrations.

The Flying Carpet. By RICHARD HALLIBURTON. (Bles. 16s.).

The aeroplane plays a growing part in travel and exploration. Mr. Halliburton describes in racy style his adventures on a flight round the world. In Northern Africa he lived with the Foreign Legion, in the Holy Land he discovered the secret tunnel under Jerusalem, and in India he photographed Mount Everest. In Borneo he had an unusual experience. Here he was entertained by head hunters and presented by their chief with a small souvenir of a dozen human heads! Unexpected little gifts like that do not disconcert the seasoned traveller! The book is full of interest and adventure and there are many noteworthy illustrations.

June, 1933

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